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The

ILLINOIS

Medical Journal

VOL. 83 NO. 6

June, 1943

In This Issue

The Future of Medicine

✦

Analysis of Current Trends in the Control of Medicine

✦

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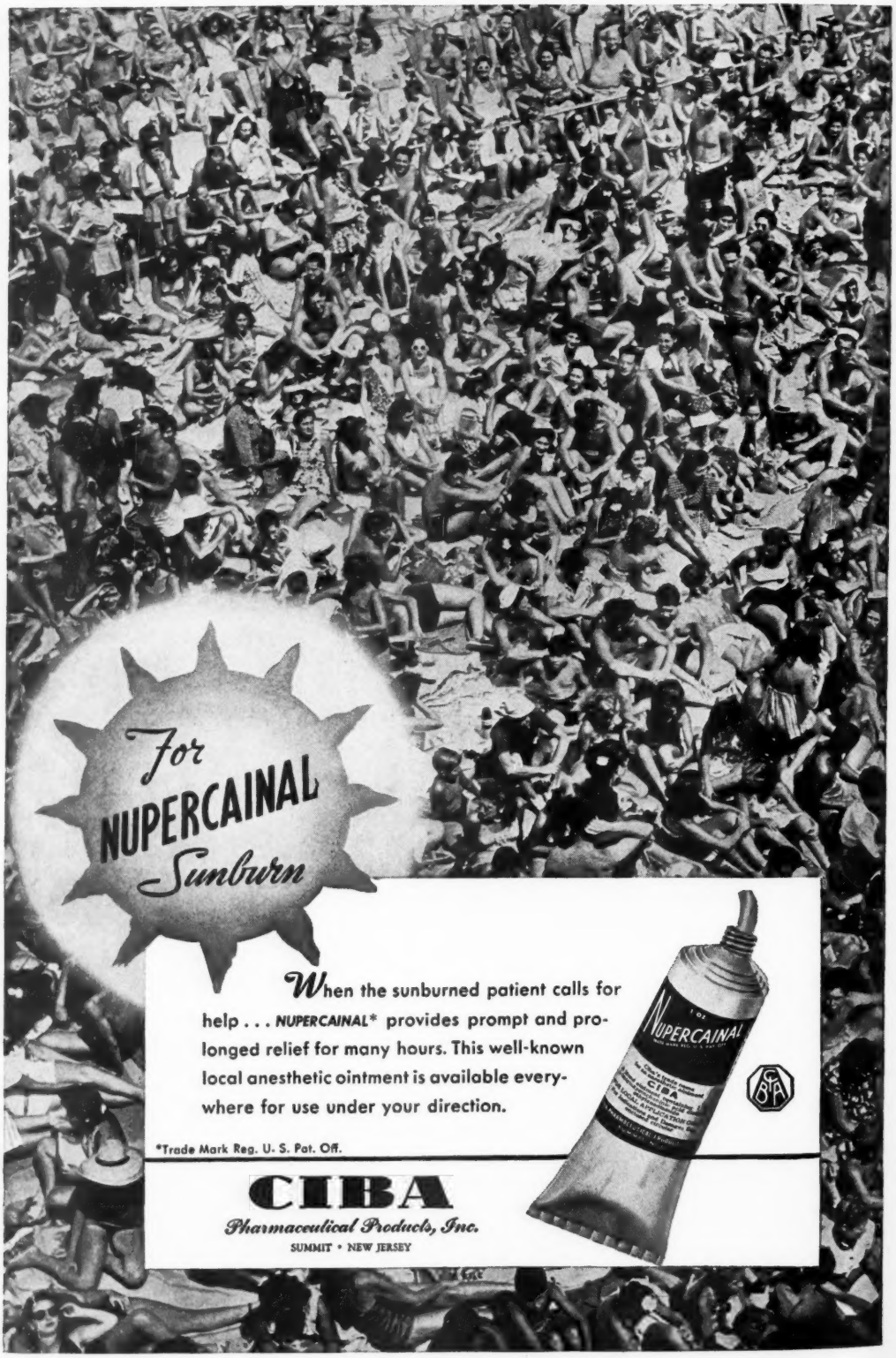
OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY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The Illinois Medical Journal

June, 1943

VOL. 83, NO. 6

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Harry Culver.

Editorials

IT WAS A GOOD MEETING!

The 103rd Annual Meeting of the Illinois State Medical Society will long be remembered as a highly successful and well worth while meeting. The attendance was excellent when it is recalled that Illinois has more than three thousand of its younger physicians in military service, and very few of the younger physicians were at the meeting.

The programs had been well arranged and subjects selected were those of special interest to the average physician remaining in civilian practice. It was quite interesting to note that physicians were present from nearly every county in Illinois, and many of the far distant counties were well represented indeed. The meetings were all held in the Palmer House, and with the inclement weather outside throughout the entire session, this arrangement was most satisfactory.

The large exhibit hall was completely filled with excellent technical and scientific exhibits, all of which had been selected carefully. Scientific exhibits featuring various phases of medicine and the war were of unusual interest. The attendance at the exhibit section was most gratifying to the exhibitors.

The Chairman of the Committee on Arrangements and his many committees had worked hard to get everything arranged to the best advantage, and they had left nothing undone which could possibly be done to add to the success of the meeting. The attendance at every session and at the several special meetings was most gratifying.

The President's Dinner on Wednesday evening had the largest attendance in the history of this important function which has been conducted annually for many years. The large Grand Ballroom of the Palmer House was filled to the limit, and many desiring to attend the dinner were unable to do so on account of lack of space, and also because of the present food rationing program which made it almost impossible to plan for more than a guaranteed maximum. Places were set for nearly 900, and many more desired admission but had to be turned down through no fault of the Committee responsible for the arrangements.

Edward H. Weld, the President of the Society, was presented with the President's Certificate by Edwin S. Hamilton, Chairman of the Council. Owing to the fact that the annual meeting of the State Medical Society came at a time near the regular annual meeting of the Chicago Medical Society, the President of the C. M. S. was presented with a fine watch by his society. The presentation was made by R. R. Ferguson to Lt. Comdr. H. Prather Saunders who has been in service during the past year, and only arrived in Chicago on leave in time for the presentation.

As an added and unusual feature, Colonel Carlos P. Romulo, known far and wide as "the last man off Bataan," gave a most inspiring and unforgettable address on the subject, "They Told Me To Tell You." For nearly two hours

he held his large audience of some 1600 people, and was given the greatest ovation ever accorded a speaker at an annual meeting. Colonel Romulo born and reared in the Philippines, educated there and also in the United States, fought side by side with General Douglas Mac Arthur as his aide-de-camp and friend.

This was his 202nd speech since last September, and everyone who heard him relate in his characteristic manner, the thrilling experiences he has had since the outbreak of war, will never forget his story. He has toured all the far eastern countries, and is thoroughly conversant with the many problems they have encountered.

The Oration in Medicine was delivered by James E. Paullin, President-Elect of the American Medical Association, and a member of the Directing Board of the Procurement and Assignment Service. His subject was "The Contribution of the Medical Profession toward Winning the War" and it was most interesting to the hundreds in the audience.

The Oration in Surgery was delivered by Willis D. Gatch, Dean and Professor of Surgery, University of Indiana School of Medicine, his subject being, "Injuries Done the Peripheral Circulation by Heat, Trauma, Infections and other Agencies. The Definition of Shock." A large attendance was had for this address and it was most interesting to all present.

Hundreds of men in uniform were present at the meeting, the Army and the Navy being equally well represented. Likewise a number of officers with the United States Public Health Service, and a number of medical women commissioned as medical officers, and also commissioned nurses, were at the meeting.

The two meetings of the House of Delegates were conducted by President Weld in an excellent manner. Although much business was transacted at these sessions, through the use of reference committees, their meetings and reports at the second meeting of the House, added materially to the utilization of all available time in

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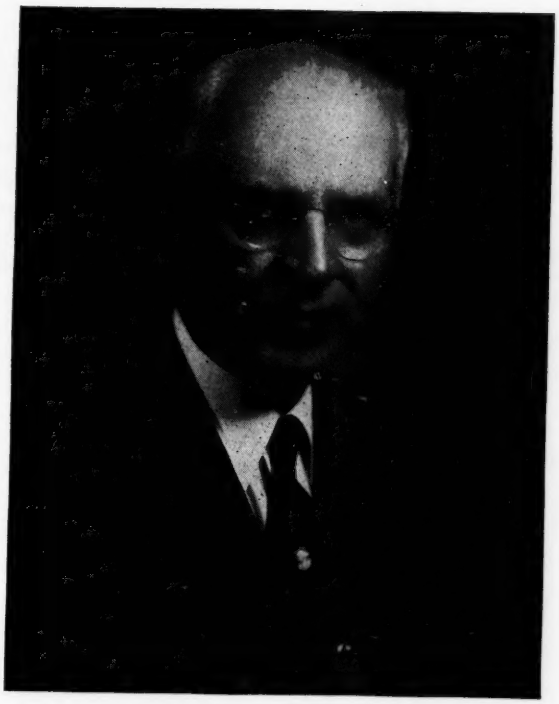

George W. Post, M.D.

President, Illinois State Medical Society
1943-1944

a constructive manner. The transactions of the House of Delegates will be published in the July number of the Illinois Medical Journal.

The location and the arrangements for our 1944 annual meeting were left entirely to the Council, and a report will be given through the Illinois Medical Journal in an early issue.

The total registration was approximately 27-00, and of this number there were approximately 2250 members of the medical profession in attendance.

At the opening meeting the address of welcome was given by the Honorable Edward J. Kelly, Mayor of Chicago, who paid a most complimentary tribute to the physicians and their work in time of war. Mayor Kelly was given a fine ovation by the large audience.

Everyone present was unanimous in the opinion that the 1943 annual meeting was indeed a fine one.

REPORT OF COMMITTEE ON AWARDS

The Committee on Awards of the Scientific Exhibits Committee had more than the usual amount of difficulty this year in determining those exhibits which were entitled to the prizes allotted by the Illinois State Medical Society each year for outstanding exhibits in the two classes.

After a most careful inspection of all exhibits, this committee submitted their report which was presented at the closing session of the House of Delegates. In submitting this report, the committee stated that there were many exhibits of unusual merit, and although it was not possible to award medals or certificates of merit to all of the exhibitors, they highly commend the exhibits as a whole.

Their report is as follows:

Group 1: *Scientific*: The bronze medal was awarded to Edith L. Potter and F. L. Adair, Chicago Lying-In Hospital and the Illinois Department of Public Health, Chicago, for their exhibit on "Erythroblastosis Fetalis."

Certificates of Merit were awarded to the following:

1. The Women's Field Army of the American Society for the Control of Cancer, for the exhibit, "The Value of Mice in Cancer Research."
2. E. W. Hagens, Department of Otolaryngology, Northwestern University Medical School, Chicago, for the exhibit, "Anatomical Presentation of Bronchial Tree from Endoscopic Standpoint."
3. V. D. Lespinasse and Victoire Lespinasse, Department of Urology, Northwestern University Medical School, Chicago, for the exhibit, "Studies on Kidney Function; Extravasation of Urine; Bladder Regeneration."
4. I. Schour, D.D.S., and H. G. Sarnat, D.D.S., University of Illinois, Chicago, for the exhibit, "Oral Manifestations of Occupational Origin."

Group 11. *Practical and Educational*: The bronze medal was awarded to George B. Callahan, Waukegan, for the exhibit, "Unifying Medical Services in Lake County." — A Plan and Practice Using Navy, Army, Veterans' Administration, Industrial and Civilian Medical Personnel and Material."

Certificates of Merit were awarded to the following:

1. G. Henry Mundt, Chicago, for the exhibit on "Epidemic Kerato-Conjunctivitis."
2. F. H. Falls and Miss C. S. Holt, University of Illinois College of Medicine and the Illinois Department of Public Health, Chicago, for the exhibit on "Hemorrhage."
3. Harold A. Vonachen, Peoria, for the exhibit, "Caterpillar Tractor Company Health Program During Time of War."
4. K. E. Barber, Children's Memorial Hospital, Chicago, for the exhibit, "Pyelography in Retroperitoneal Tumors in Children."

STARTING THE SECOND QUARTER CENTURY!

John S. Nagel, for 25 years continuously a member of the Council of the Illinois State Medical Society, was elected at the recent annual meeting for another three year term. Dr. Nagel, the oldest member of the Council in years of service, has devoted much time to the important duties which have been assigned to him. Those who have known "Jack" and have been familiar with his untiring efforts in the interests of the medical profession as a whole, and especially for the Illinois State Medical Society.

well realize that he has trained many members of the Council during the past quarter century. His many trainees do not hesitate to tell how much they have gained through associations with him over a period of time.

Dr. Nagel for many years recommended that some plan be developed to care for members of this Society who are disabled and who need aid in their declining years. Three years ago his untiring efforts were rewarded by the adoption of changes in the By-Laws of our Society to provide for a Committee on Medical Benevolence. As was most fitting, he was elected as Chairman of this committee. The annual report of the Committee was given to the House of Delegates on Tuesday, May 18th, by Dr. Nagel, and it will be of interest to the many members of the Illinois State Medical Society. Many benefits have been paid during the past year to disabled physicians and to widows of former members. Many letters have been received by the Committee relating to this deserved aid, and thanking the Committee and the Society as a whole for benefits which have been received.

The thousands of friends of Dr. Nagel in the Illinois State Medical Society join with the editor in thanking him for the 25 years of work he has done; for his guidance of those yet inexperienced, and for the many things he has done for others. We all unite in wishing him an easier task for his second quarter century, and we sincerely hope that he will continue these activities for many years to come.

YOUR OFFICERS FOR 1943-1944

At the second meeting of the House of Delegates at the annual meeting in Chicago the following officers, Councilors and Standing Committees were elected:

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President Elect ..... E. P. Coleman, Canton
First Vice President .... Robert S. Berghoff, Chicago
Second Vice President .. Wade C. Harker, Chicago
Secretary-Treasurer .. Harold M. Camp, Monmouth

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.... E. W. Mueller, Chicago (to succeed L. E. Day)
Fourth District .... Charles P. Blair, Monmouth
Fifth District ..... Ralph P. Peairs, Normal
Seventh District ..... I. H. Neece, Decatur
Eighth District ..... C. E. Wilkinson, Danville

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Robert H. Hayes ..... Chicago
Mather Pfeiffenberger ..... Alton
C. E. Wilkinson ..... Danville
L. O. Frech ..... Decatur

ALTERNATE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

Bernard Klein ..... Joliet
K. B. Rieger ..... Freeport
E. C. Kelly ..... Peoria
Fred H. Muller ..... Chicago
H. K. Scatliff ..... Chicago
C. O. Lane ..... West Frankfort

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H. W. Woodruff ..... Joliet
Medical Legislation Committee
James H. Hutton ..... Chicago
Robert H. Hayes ..... Chicago
Hermon H. Cole ..... Springfield
Medico-Legal Committee
(Two members elected each year for three years)
R. O. Hawthorne ..... Kankakee
Pliny R. Blodgett ..... Chicago Heights
Medical Education and Hospitals
(One member elected each year for three years)
H. O. Munson ..... Rushville
Medical Benevolence
Charles H. Hulick ..... Shelbyville
Harold M. Camp ..... Monmouth

At the close of the meeting of the House of Delegates on Thursday morning, George W. Post was inducted into the office of President by the retiring President, Edward H. Weld. Dr. Weld in this ceremony, paid a tribute to his successor, whom he stated, is well qualified for this important office.

Dr. Weld was given a fine tribute by the House of Delegates for his continued interest in the welfare of this Society, as well as the medical profession in general, and for the many duties which have been well performed by Dr. Weld during his tenure of office.

LIFE AND ITS EPOCHS

It has occurred to you of course that we human beings enter this world toothless, hairless and brainless and leave it in much the same fashion provided we overrun our full cycle.

Did you ever stop to consider, however, that life — complex as it seems — divides itself rather nicely and simply into three Epochs or Cycles? And even if that thought did occur to

you, have you ever sat back comfortably in your chair, closed your eyes and musingly assayed the assets and liabilities of these three brief, fleeting episodes of your existence, one against the other? Why not do it now while I recant them for you!

Youth, the First Cycle, from birth to twenty-five, is the period of growth, of energy, of physical and mental expansion. It symbolizes spontaneous initiative, but lacking both experience and mature deliberation, is suggestive of unbridled arrogance, and its end result with some exceptions is unpredictable, a maudlin mixture of success and failure.

The Second Epoch or Cycle from twenty-five to fifty years represents Maturity — Man's Prime. Physical endurance has reached its peak and mental acuity has sharpened to razor's edge. With the failures and experiences of youth as a background, judgment broadened, and the intangible reminders of the approaching "stretch" prodding a fired ambition, this is indeed the fruitful period of life. Man now works and slaves and, ignoring the distractions of youth, he builds as strenuously as the coral insect and like it he will shortly disappear, content if he has left some minute constructive atom in this vast enigmatic world.

Senility, the Third and last Cycle of man, pitied by Youth, ruthlessly shoved aside by Maturity, blends in unheralded to close man's book of life. What does Senility hold for you and me, Mr. Average Man? Is it merely the culmination of Adolescence and Maturity, or a preparatory exitus, or a vegetative shading off into the unknown? Ah, no, my friends!

Senility begins with a carry-over of the two Cycles irretrievably gone! Youth. virility, ambition, energy, and most important, all these bolstered and fortified with perspicuity and ripe judgment, with discernment and tolerance, all *resulting in keen analysis and complete self enjoyment.* Add to all this the spice of Calm, of a *kaleidoscopic mental review of a long life well* spent, and you have the tasty dish of life in its complete fruition.

Thus we have the picture of man from the Cradle to the Grave. Add to it if you will *Religion and belief in a God and a Hereafter, and* then visualize your ship sailing calmly and *peacefully into the Harbor of Eternity.*

Robert S. Berghoff

PEDIATRIC ANTIQUES ON TOUR

It has been well said that more progress has been made in pediatrics during the past three or four decades than in all the time before that.

As applied to the feeding part of pediatrics, the Mead Johnson Collection of Pediatric Antiques bears eloquent witness to the great strides made. Without such evidence, it would be difficult, indeed, to imagine our own grandparents being fed from some of these odd-shaped utensils that defied thorough cleansing. To be sure, sterilization and pasteurization were not then in vogue. Not all babies received breast milk in abundance. In the days when wet nurses were common, some of these enterprising women literally did a wholesale business, managing to nurse three or four infants.

The baby's cereal of a century ago was simply stale bread lightly boiled in water, wine or beer. Butter or sugar might be added but the use of milk was regarded as fraught with danger. It was thought, according to Dr. T. G. H. Drake, "Milk might bring on the watery gripes, or the infant might imbibe with the milk the evil passions and frisky habits of the animal supplying the milk."

From a personal hobby enjoyed by the late E. Mead Johnson, Jr., the Collection of Pediatric Antiques, illustrated in the pages of a catalogue just issued, has evolved into one of considerable historical importance, depicting as it does the progression of infants' feeding vessels from the Greece of twenty-five centuries ago down to time within our own memory.

The Collection has been steadily growing in size and scope is of increasing interest for teaching purposes via the historical route. The destruction of original sources caused by the war tends to add to the value of these objects.

Hence it is that, by request, the Collection now goes on an annual pilgrimage to colleges, *hospitals, museums, libraries and other institutions* of learning. Arrangements may be made *for "stop-overs" upon application to the curator.* Mead Johnson & Company, Evansville, Indiana, U. S. A.

"I am going to see the doctor about my wife. I don't like the way she looks."

"I'll go along with you. I don't like the looks of mine either."

Correspondence

OFFICE OF EMERGENCY MANAGEMENT
WAR MANPOWER COMMISSION
Washington, D. C.

May 6, 1943

Dr. Harold M. Camp
Editor, Illinois Medical Journal

Dear Doctor Camp:

Attached are statements pertaining to the procurement of physicians to meet the nation's military and civilian needs, prepared by the surgeons general of the Army, Navy and the U. S. Public Health Service, and the chairman of the Directing Board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians.

The failure of some areas in the country to provide their quota of physicians for the armed forces reflects unfortunately on all of American medicine. Is American medicine incapable of making the sacrifices required of it without compulsion?

We must face one inescapable fact. Our fighting men, and those who must remain behind, must and will have medical care. It will be obtained one way or another. The choice of methods is still in our hands. The medical profession of this country never has failed the nation; it must not do so now!

The Directing Board of Procurement and Assignment Service seeks your further aid in the recruiting task that is before us by requesting that you publish in the next issue of your journal the four statements that are attached. An editorial in the same issue calling attention to these statements and some of the considerations referred to in this communication, also would be most helpful.

The Directing Board is most grateful for the aid you already have extended them and for that which it knows you will continue to extend.

Very truly yours,
Frank H. Lahey, M.D.
Chairman, Directing Board

STATEMENT OF CHAIRMAN, DIRECTING BOARD PROCUREMENT AND ASSIGNMENT SERVICE FOR PHYSICIANS, DENTISTS AND VETERINARIANS

Figures are now complete on the 1942 quotas for supplying physicians of the various states. Forty States have exceeded the 100 percent figure of their quotas. Five States were above 90 percent of their quotas. Four States — New York, Connecticut, Massachusetts, and Nevada were below 90 percent of their quotas.

Nevada is the lowest State, but has a total quota of but 35 doctors. It has provided 23 and deserves special consideration because its population is thinly scattered over wide areas.

This statement would not imply any reflection on the patriotism of those members of the medical profession who have been marked available by the Procurement and Assignment Service in these three States and who have not sought a commission. I would only present the facts and let each one draw from these facts whatever deductions he individually chooses.

Certain unavoidable considerations must be faced in these figures. Four States failed to provide 90 percent of their 1942 quotas of doctors for the services. Three of these States — New York, Connecticut, and Massachusetts, are

Eastern Seaboard States and among the most populous ones in the Union. These populous States have large cities in them which now have more doctors per thousand persons than most other parts of the country. Largely because those doctors marked available by the Procurement and Assignment Service have not sought commissions these States are below their quotas.

Unless more of the doctors found available for military service by the Procurement and Assignment Service in these cities apply for a commission in the armed forces with reasonable promptness still more doctors must come from rural communities. This will greatly complicate the problem for those communities in their own and other States since many rural communities are already none too well supplied with doctors. Such inequalities in medical service as now exist are in which become practically insurmountable for the Procurement and Assignment Service with its present limited authority. With all these facts in mind, with the responsibility of medicine to the country and to itself such as it is, the quota figures particularly in New York, Connecticut, and Massachusetts should be brought up to par by an intensive effort of the State Medical societies through their executive bodies preferably by an organized Sate Medical society campaign.

The provision of doctors for the armed forces is not only the special obligation of medicine but a responsibility which it acknowledges and accepts as its part in the war effort. Each State that has not met its 1942 quota will be kept informed of its position in relation to its quota and its position in relation to other States. Otherwise, a State is denied the pardonable pride of satisfaction in meeting its quota or pampered against facing a distasteful position in relation to other States.

STATEMENT OF THE SURGEON GENERAL OF THE UNITED STATES ARMY

The Army is increasing in size; more medical officers are required. New units are being formed and many new general hospitals are under construction at many points in the United States. Some basic training must be given to medical officers before they are assigned to purely medico-military duties; for this reason, they are needed one or two months prior to actual assignment. For the protection of the health of the civilian population, the quotas for physicians must be fairly distributed throughout the country. Certain states are far behind; they will, it is hoped, do everything possible to furnish their quotas at once.

STATEMENT OF THE SURGEON GENERAL OF THE UNITED STATES NAVY

In order to plan intelligently I have reviewed the personnel situation in the Medical Department of the Navy. There is a deficit of approximately nine hundred medical officers for the next six months, based on minimal requirements. The Bureau of Medicine and Surgery calls medical officers to active duty when billets are available, does not build up too large a Reserve at any time. Consequently, procurement must go on in an orderly fashion, if we are to meet the demands that will be placed upon us as the offensive fighting develops. We can not afford to have the deficit increase beyond its present level; if it does we will not be able to give first-class medical service to our wounded.

The Medical Department of the Navy is charged with maintaining the health of all the personnel of the Navy and the Marine Corps; in addition it must care for the dependents of the officers and men. We look to the medical profession of our nation to come forward with the available doctors that can be spared from civil life to aid in our military necessity. In the main, the profession has responded nobly. There are some localities where this is not so. In those localities the medical profession should cause the pressure of public opinion to bear on all eligible doctors and thereby bring to their attention the seriousness of failing to do their patriotic duty.

The medical profession is faced with a challenge of furnishing medical service to the Armed Forces and to the civil population during the active state of war and in the post war period, which we hope is not too far distant. Should the profession fail in either regard many forces may develop that will destroy the practice of medicine as we know it. This would be disastrous and it is something that we can not

afford to allow to come about. In all seriousness, the doctors of medicine in the United States should take stock carefully of their own immediate situations and should give every assistance in planning to see that medicine plays its responsible part in this and coming years.

STATEMENT OF THE SURGEON GENERAL OF THE U. S. PUBLIC HEALTH SERVICE

During the next twelve months, the Public Health Service will require approximately 600 medical officers for full-time active duty in the reserve commissioned corps. These physicians will be recruited on an average of 50 a month — 25 for service in the U. S. Coast Guard, and 25 for general service.

In addition to the medical officers assigned to the Coast Guard, physicians are needed for duty in the Marine Hospitals and the medical program of the War Shipping Administration, as well as for detail to general public health work in State and local health departments, and for such specialized war programs of the Public Health Service as tuberculosis control, venereal disease control, industrial hygiene, and community medical services.

The Service also expects this year to commission some 5,000 physicians in the inactive reserve. These doctors will be available for active duty in the event of acute emergency in their own or nearby communities. They will not be called for active duty unless an acute emergency exists, and will be retained only for the duration of such an emergency. This recruitment of inactive officers is undertaken as a part of the cooperative program of the Public Health Service and the Office of Civilian Defense.

The needs of State and local health departments for physicians have increased greatly during the past year. In January 1942, it was estimated that State and local health departments would need 600 physicians. As of January 1943, the exact needs have not been determined, but the Public Health Service has, at the present time, requests from the States for 185 medical officers to be assigned to duty in war areas alone.

According to reports from State Procurement and Assignment chairmen, as of March 23, 1943, 268 additional doctors for civilian practice are needed in 176 counties located in 38 States. Another 22 counties in the same States report a shortage of physicians but do not specify the numbers needed. In the remaining 10 States, no needs were reported.

These 198 counties reporting immediate needs represent only 7 percent of the 2,654 counties in the 38 States, and only 6 percent of all counties in the country. Nevertheless, it is apparent that civilian communities are feeling the pinch of physician-shortage increasingly, since experience has shown that local needs become acute before they are expressed in formal reports. In the joint studies made in 42 areas by the Public Health Service and the Procurement and Assignment Service, it has been determined that 59 physicians and 5 dentists, or 64 medical and dental personnel, are needed in these areas — an average of 1.5 per study. The Public Health Service has been requested to supply 13 of these physicians and dentists, or 23 percent of the determined need.

On the basis of these 42 studies, it is estimated that 500 physicians and dentists will be needed in 332 areas to be surveyed in the next coming fourteen months, or by June 1, 1944. It is anticipated that 80 percent of these, or 400, will be supplied by voluntary relocation through the regular channels of Procurement and Assignment, and that the Public Health Service will be requested to assist in meeting the needs for the remaining 20 percent, or 100 physicians and dentists. This may be done either through financial assistance to physicians desiring to relocate in areas requiring their services, or through assignment of Public Health Service personnel upon request of the proper authorities.

Although it is impossible to project with accuracy the 1943 needs of civilian communities, we must face the fact that the shortage undoubtedly will increase during and after the filling of the 1943 military quotas; and that the chances of meeting civilian needs as well as replacing physicians who die or withdraw from practice because of disability, will correspondingly decrease. Furthermore, we cannot predict at this time the possible needs of certain rural areas, which now may be adequately supplied but which will require additional public health and

medical services during 1943, should the Government move a large number of farm families into these areas for the food production drive. It is believed that joint action of the Public Health Service and the Procurement and Assignment Service will serve to meet urgent needs in civilian communities.

COMMITTEE TO STUDY INVALIDS' FOOD NEEDS

A newly formed committee of physicians and specialists will assist in formulating broad policies for handling the special dietary needs of invalids and persons with specific diseases under the rationing program, the War Food Administration announces.

The advisory committee was named by the National Research Council, at the request of the Food Distribution Administration and Office of Price Administration. (1) The special committee is studying procedure for obtaining certification by physicians of invalids and persons with specific diseases requiring extra quantities of rationed foods; (2) Qualifications of those who may certify as to these needs for extra foods; (3) The procedure of certification which will place a minimum burden on physicians; (4) Diseases justifying extra allowances of rationed foods with specific determination of what foods and what quantities are necessary.

The committee, which is the subcommittee on Medical Food Requirements of the Committee on Drugs and Medical Supplies of the National Research Council, also will advise OPA with respect to appeals from decisions of local rationing boards. Members represent the following fields: internal medicine, surgery, obstetrics, pediatrics, dermatology, and metabolism (diabetes).

Members of the committee are: Dr. William D. Stroud, Professor of Cardiology, Graduate School of Medicine, University of Pennsylvania, Chairman; Dr. Clark W. Finnerud, Assistant Professor of Dermatology, University of Illinois; Dr. Gilbert J. Levy, Associate Professor of Pediatrics, University of Tennessee; Dr. Alton Ochsnor, Professor of Surgery, Tulane University School of Medicine; Dr. Cecil Striker, Secretary, American Diabetic Society; Dr. C. W. Munger, Director, St. Lukes Hospital (New York City); Dr. Philip S. Owen, Former Research Assistant, Harvard Medical School, who will serve as technical aide; and Dr. Fred L. Adair, recently Professor of Obsterics, University of Chicago, who will serve as a liaison member representing the Medical Needs Division of the Food Distribution Administration. Dr. W. W. Palmer, Professor of Medicine, Columbia University, and chairman of the National Research Council's committee on Drugs and Medical Supplies, is *ex officio* a member of the Subcommittee on Medical Food Requirements.

WILL PUBLISH BIBLIOGRAPHY

A project which will make The National Foundation for Infantile Paralysis the only complete central, authentic source of information on infantile paralysis in the world has been announced by Basil O'Connor, president of the Foundation.

A complete bibliography of all scientific literature that ever has been published pertaining to infantile paralysis is being compiled by the foundation, and is expected to be ready for publication in book form in the early part of 1944. The first volume will contain a record of all scientific material on poliomyelitis published in the world up to the end of 1943. Subsequently, the data will be kept up to date by publication of annual supplements. Brief abstracts of the more important articles will be included in the bibliography to be published by the Foundation.

"This will be the first time there has been compiled a complete international bibliography on infantile paralysis," Mr. O'Connor said. "It will make available to the medical world data that will acquaint research workers with investigative work that already has been done in connection with the many aspects of the disease and be of great assistance in helping them avoid repetitious investigations.

"The collection of these data will make available for medical men throughout the world complete information pertaining to infantile paralysis articles published in any language. It will make instantly available to those who request it data never before gathered in one central location."

The compilation of the information is being carried out for the Foundation with the aid of the library of the American Medical Association and the John Crerar Library, both in Chi

cago, under the direction of Morris Fishbein, M.D., editor of The Journal of the American Medical Association, and Dr. Ludwig Hektoen, Chicago, editor of the Archives of Pathology.

Through the work of the International Committee for the Study of Infantile Paralysis, organized by Jeremiah Milbank in 1928, much time has been saved in the compilation of the early literature in the field of infantile paralysis. The Committee, prior to its dissolution in 1932, had collected data pertaining to all literature regarding the disease that had been published up to that time. These data, now the property of the Library of the New York Academy of Medicine, have been turned over to the National Foundation for inclusion in the publication. Assisting in carrying out the work in Chicago is Miss Ella Salmonsen, medical librarian of the John Crerar Library.

3,000,000 COMFORT ITEMS MADE FOR ARMY AND NAVY BY RED CROSS VOLUNTEERS

American Red Cross volunteers have produced the staggering total of 3,102,072 articles for the use of the United States Army and Navy hospitals and the able-bodied men in the armed forces within the past eight months, it was disclosed today.

Colin Herrle, assistant director in charge of Red Cross Domestic Operations, said the articles were made according to Army and Navy specifications.

Exceptions to military regulations were the comfort articles distributed to the men in hospitals. They included 18,184 bathrobes; 59,629 hot water bag covers; 19,162 pairs of pajamas; 16,329 pneumonia jackets and 16,259 sleeveless sweaters. Other items were afghans, bedroom slippers, bed shirts, bedside bags, pillows, pillow covers, quilts, socks and other essential clothing and equipment contributory to the comfort of convalescents.

Predominate on the list for Army were: 183,141 wristlets; 119,922 turtle-neck sweaters; 18,375 rifle mitts; 41,264 cap-mufflers and other warm apparel. These supplies are distributed among the soldiers by Red Cross field directors at the specific request of Commanding Officers and in time of emergencies.

Navy needs were met with 73,195 watch caps; 7,423 "Iceland" sweaters; 108,775 helmets; 5,220 boot stockings and 38,411 scarfs. These supplies are delivered to Navy depots where they are issued only upon request of Commanding Officers.

The Midwestern Area contributed the greatest amount of hospital equipment with a total of 221,781 articles while the Pacific Area led with its contribution of 720,570 items to the able-bodied of the armed forces. The report showed that, in the majority of cases, every area either equalled or exceeded its quota.

TO WHOM IT MAY CONCERN:

This is to inform you that because of the present emergency, the Office of War Information has decided that the Annual Reports of the Surgeon General of the U. S. Public Health Service will be discontinued for the duration of the war.

By direction of the Surgeon General.

Respectfully,
E. R. Coffey,
Assistant Surgeon General,
Division of Sanitary Reports and Statistics

ANTISPASMODIC NEW PRODUCT OF SEARLE RESEARCH

Pavatrine — a safe, potent, non-narcotic antispasmodic for use in dysmenorrhea and gastrointestinal spasticities — is being introduced to the medical profession by G. D. Searle & Co.

Pavatrine has a dual antispasmodic action — both neurotropic and musculotropic. It has the ability to abolish uterine contractions and relax spasm of the stomach, small intestine, colon and urinary bladder.

To determine the human tolerance for Pavatrine, it was administered in amounts up to 23 grs. daily with complete freedom from untoward reactions. Usual adult dose is from 3 to 6 tablets per day.

Supplied in tablets (2 grs.) in bottles of 20, 100 and 1000.

★ BUY WAR BONDS ★

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

The following was an editorial that appeared in the Chicago Tribune May 29, 1943.

"OUR FIGHTERS' HEALTH"

"News as heartening in its way as the tidings of victory itself has come from North Africa in the announcement by Maj. Gen. Ernest Cowell of the British army, director of the allied medical services, who says that the American and British armies in that area probably are the healthiest expeditionary force in the world and that no expeditionary force in history has had better provision made for its medical care.

Deaths from wounds in the African campaign were only a fraction, Gen. Cowell said, perhaps one-fifth or less, of the rate established in the first World war. One general hospital which handled 1,500 severely wounded cases reported only five deaths.

Of equal importance, of course, has been the protection of the armies against disease. Even after the medical discoveries of the 19th century laid the foundations of sanitation the disease ratio in armies was high.

In our own Civil war, it is said, the northern army suffered as many deaths from measles and the pneumonia that followed as from confederate bullets. The typhoid and yellow fever epidemics of the Spanish American war were far more deadly than the Spanish Mausers. In spite of the well organized medical corps of the first World war, the so-called Spanish influenza took a heavy toll in the flimsy training camps in this country.

From our campaigns in this war, both in Africa and in the Southwest Pacific the fighters have come back with the most glowing tributes to the medical corps. Its members, surgeons, orderlies, and nurses have taken just as great risks as the combat troops. Their hospitals have not been immune from bombing. Sometimes the ships that carry their equipment and supplies have been sunk. They have had to bathe their patients out of steel helmets, but the patients have had the baths. They have operated by candlelight, stayed on duty in their surgeries for 24 or 48 hours when the wounded were streaming in.

The story of the medical corps should be spread more widely, because it is one of the most comforting things that can be told the parents and wives of the fighting men."

The statements made in the above editorial speaks for the progress in medicine in the last 25 to 50 years, and also for the utilization of that progress, not only, in the care of the civilian population but in the care of our armed forces. It must be recognized that all medical men do not have the same ability and the same energy to progress and utilize known knowledge. However, in this World war the best trained medical men in the various branches are now serving their country, and they are doing the particular type of work that they have been trained to do; and just as they have evidenced ability and energy in private practice to utilize known knowledge they are continuing to do this in their military capacity.

It is gratifying to both the public and the profession that politics has had little place in the medical department of the army in World War II, and perhaps this is one of the most important reasons for the splendid reports that

come forth. In the past wars politics have played an important part in medical appointments as in all other appointments, and probably this continues to be more or less true in many branches outside of the medical corps.

It is well known that in the Civil war Sherman complained bitterly of the politicians, and when he was considered a candidate for nomination for President of the United States he declined, saying that he wanted nothing to do with politicians.

It is also well established that Jefferson Davis, in spite of the fact that he had some military training, allowed politicians to influence him to a large degree, and that he kept Lee shackled for a long period of time because he could not forget his political status and political influence.

Perhaps if other branches of our military service would follow the line that has been followed in the medical corps, and place men in the positions that they have been trained for and demonstrated their ability to function in; many of our problems would be solved with less expense and less loss of lives. It seems a strange thing that in the midst of war we cannot call upon our best trained men to do the thing they are best trained for. Obviously many men are occupying positions of great trust and importance that they are trained for, and in those instances they are proving successful in the operations they are undertaking.

On the whole scale in Washington it seems evident that many departments are not well coordinated such as Man Power Commission, O.P.A., and etc. As their troubles mount there seems to be no direct tendency to replace these men with trained men, but rather to create a new bureau, thus hoping that something will happen to iron out the problems at hand.

R. K. Packard, M.D., Chairman
Committee on Medical Economics.

June 1, 1943

FIND KIDNEY VASCULAR DISEASE NOT SOLE FACTOR IN PRODUCING HYPERTENSION

Microscopic studies of specimens of the kidneys from 100 living patients with hypertension or high blood pressure, made during the course of operations for the hypertension, showed that 60 per cent had normal renal or kidney function, in contrast to the almost invariable finding of well developed disease of the minute arteries in the kidneys of hypertensive patients observed post mortem, Benjamin Castleman, M.D., and Reginald H. Smithwick, M.D., Boston, report in *The Journal of the American Medical Association* for April 17. Twenty-eight per cent of the biopsies made by the two men showed no or insignificant vascular disease and an additional 25 per cent only mild changes.

"From these observations," they say, "it is concluded that the . . . . evidence of renal vascular disease in more than half of the cases was inadequate to be the sole factor in producing the hypertension and that in many of these and probably others the hypertensive state antedated the renal vascular lesion (injury), which, once established, probably aggravated the hypertension. Furthermore, these observations are not in keeping with the concept that renal ischemia (temporary deficiency of blood due to contraction of a blood vessel) due to preexisting renal vascular disease is the cause of essential hypertension in man. . . ."

Commenting on these findings, *The Journal*, in the same issue, explains that:

"The demonstration by (Harry) Goldblatt that chronic hypertension regularly follows partial clamping of the renal arteries of dogs and by (A. R.) Moritz and (M. R.) Oldt that people with chronic hypertension usually show diffuse renal arteriolar sclerosis (hardening of the minute arteries) at necropsy, whereas normal persons rarely have such sclerosis, suggests that renal vascular disease in man may be the etiologic (causative) counterpart of the Goldblatt clamps in the dog. . . . Although all their (Castleman's and Smithwick's) patients had severe chronic hypertension, the renal vascular disease observed in 53 was so slight that it seemed unlikely in the opinion of the authors 'that the blood flow could have been embarrassed sufficiently to be the one factor responsible for the hypertension.' Thus it would appear that most if not all of the renal arteriolar lesions observed in persons dead of the effects of chronic hypertension should probably be regarded as secondary rather than primary. . . ."

A physician should be a servant of Nature, not her enemy. — *Paracelsus*, 1530.

Medicine's Role in the War Effort

ARMY AND NAVY MEDICAL TRAINING PROGRAM

Official Announcement on Details of Army and Navy Programs for Training Medical Students

ARMY PROGRAM FOR STUDENT TRAINING

In order to assure the Army the annual loss replacements for medical, dental and veterinary officers, the Army Specialized Training Division has been directed to train a sufficient number of enlisted men, who, on receipt of the appropriate degree in medicine, dentistry and veterinary medicine, may be appointed in theMedical, Dental or Veterinary Corps, Army of the United States. Such training will include both a pre-professional and a professional phase and as far as possible will be continuous. To this end, basic military training will not be required of enlisted men of the Enlisted Reserve Corps who are bona fide preprofessional and professional students and who, when called to active duty, are finally selected for premedical or medical training under the Army Specialized Training Program. Basic military training will be, however, required of all other groups.

ENLISTED MEN

Enlisted men recommended by Army Specialized Training Program Selection Boards for assignment for such preprofessional or professional training, at any level, must be thoroughly qualified as regards fitness and aptitude for subsequent professional training. Their scholastic ability likewise must be such that attrition in both the premedical and medical phases will be held to a minimum.

STUDENTS IN MEDICAL ADMINISTRATIVE CORPS

There are now in approved schools of medicine, dentistry and veterinary medicine approximately 22,000 students who hold commissions in the Medical Administrative Corps, A. U. S., or in the Officers Reserve Corps and who are on an inactive status for the purpose of completing their professional training with a view to appointment in the Medical, Dental or Veterinary Corps, A. U. S. The discharge of these students, at their own request, from their commissions and their enlistment in the Enlisted Reserve Corps has been authorized. Students so enlisted will be ordered to active duty at the end of the academic period which terminates between April 15 and June 30, 1943 or, if the academic period continues beyond the latter date, on June 30, 1943. Orders calling such enlisted men to active duty will be issued fifteen days prior to termination of the academic period or June 30, 1943, whichever is applicable. These students will be invited to submit letters of resignation for the purpose of enlistment in the Enlisted Reserve Corps.

Contracts will be requested with all approved schools effective not later than the beginning of the next academic term which ends before June 30, 1943.

ROTC STUDENTS

First and second year advanced course ROTC medical students who hold commissions in the Medical Administrative Corps, A. U. S., or in the Officers Reserve Corps and who resign their commissions and enlist in the Enlisted Reserve Corps will be called to active duty as prescribed. Those not in the Enlisted Reserve Corps may

be voluntarily inducted for subsequent transfer to the Enlisted Reserve Corps and call to active duty.

ASSIGNMENT OF STUDENTS

Medical, dental and veterinary students in good standing in approved schools of medicine, dentistry and veterinary medicine, not under Army jurisdiction, if inducted under Selective Service subsequent to June 30, 1943, will be assigned with the least practicable delay to the Army Specialized Training unit at the institution in which currently matriculated.

The total number of college students pursuing approved premedical, predental and preveterinary courses is greatly in excess of the capacity of approved schools of medicine, dentistry and veterinary medicine. It is emphasized that these trainees are soldiers assigned for university training rather than "students in uniform." Premedical, predental and preveterinary students in the Enlisted Reserve Corps will be called to active duty and assigned to an appropriate Specialized Training and Reassignment unit for classification and reassignment. Enlisted men recommended by selection boards at specialized training and reassignment units for continuation of their preprofessional training or for professional training will at the proper time be assigned to an appropriate Army Specialized Training Unit. Those not recommended for such training will be assigned to an appropriate replacement training center for the completion of the required period of basic military training or, for those not recommended for any phase of Army Specialized Training to an appropriate unit or installation within the territorial limits of the service command.

INDUCTION UNDER SELECTIVE SERVICE

Premedical and predental students only, not in the Enlisted Reserve Corps, if inducted under Selective Service subsequent to the end of the academic period which teminates prior to June 30, 1943 or, if the academic period continues beyond this date, subsequent to June 30, 1943, reporting at reception centers, will, if they attain a score of 115 or better on the Army General Classification Test, be transferred to a Medical Department Replacement Training Center if practicable or to an appropriate installation within the geographic limits of the service command for basic military training. Such men will be designated as candidates for the Army Specialized Training Program. They will there appear before the Army Specialized Training Program field selection board for selection or rejection for the Army Specialized Training Program. Enlisted men who have completed the required preprofessional schooling and have been recommended for professional training by the Army Specialized Training Program selection board at a Specialized Training Assignment and Reclassification unit, but for whom there are no appropriate immediate vacancies in contracting schools of medicine, dendistry and veterinary medicine, will be assigned to a Medical Department Replacement Training Center and/or to other service command installations, preferably with the Medical Department, pending assignment to a suitable unit within prescribed quotas, for professional training.

The procedures for the selection of enlisted men for assignment for training in medicine, dentistry and veterinary medicine under the Army Specialized Training Program will be no less thorough and exhaustive than those now in common usage for acceptance for admission to the accredited professional schools throughout the country.

NAVY PROGRAM FOR STUDENT TRAINING

Medical students who at present hold commissions as Ensigns H-V(P), USNR, have the option of remaining on inactive duty in their present status until completion of their course in medical school at their own expense, or they may resign their commission and enlist as Apprentice Seamen, U. S. Naval Reserve, and be placed on active duty with pay, uniforms and a per diem allowance to defray the cost of their subsistence. The tuition will be paid by the Navy, including the cost of books and the cost of renting microscopes or other equipment necessary in the medical courses.

ENTERING STUDENTS

Students who are now in medical school, or those who have been accepted to the next entering classes, who are Ensigns H-V(P), USNR, will continue in these schools. On satisfactory completion of the prescribed course of studies, the students will be commissioned in the Naval Reserve as Lieutenants (junior grade) MC-V(G) on an inactive duty status to complete one year of internship in a civilian hospital.

Those students who desire to enter the Medical Corps of the regular Navy and successfully pass the examination will be assigned to an internship in a naval hospital, on active duty.

If the student fails to maintain satisfactory standards on active duty in the Navy College Training Program, he may be assigned to general duty in enlisted status in the rating for which qualified. The pay of Apprentice Seamen on active duty, without dependents, is $50 per month. Certain allowances are made for the dependents of an Apprentice Seaman on active duty contingent on the allotment by the man concerned of a portion of his pay to his dependents. The amounts of the allowances depend on the number and relationship of the dependents.

ENSIGNS

Married Ensigns H-V(P), USNR, are eligible for enrolment and participation in the Navy College Training Program. The maximum age restrictions prescribed for other Apprentice Seamen in the Navy College Training Program are not applicable to former Ensigns H-V(P).

Former Ensigns H-V(P) who enlist and who are attending medical school on or about July 1, 1943 will be ordered to active duty at the school which they are attending at that time. Navy medical students in the Navy College Training Program will pursue an accelerated course. While on active duty in school, medical students will wear a Midshipman or Cadet type uniform with suitable distinguishing insignia.

Applications for appointment as Ensigns H-V(P), USNR, from civilian students in medical school, or those students who have been accepted for admission to the next entering class of an approved school, will not be accepted after June 1, 1943. Thereafter qualified students who are in attendance at or who have been accepted by an approved medical school will, on approval by the Bureau of Medicine and Surgery and the Bureau of Naval Personnel, be inducted as Apprentice Seamen, Class SV-12 (S), for training in the Navy College Training Program.

PREMEDICAL STUDENTS

Premedical students assigned to colleges and universities particating in the Navy College Training Program will be made up mostly from premedical students who now hold an enlisted rating in class V-1 or V-7, USNR. A small percentage of premedical students will be taken from the successful applicants who passed the test given on April 2, 1943 in all high schools and colleges in the country. Tests will be given again in November 1943 and in March 1944.

Premedical students formerly in class V-1 and V-7, on active duty in the Navy College Training Program, who are not selected for medical training by the Navy but who are acceptable to an approved medical school, may submit request to the Bureau of Naval Personnel for discharge. Each such request will be considered on its own merits. If not acceptable to an approved medical school, such men will be considered candidates for other officer candidates training in which qualified.

The course of studies for premedical students entering the first term on July 1, 1943 will run for five terms of sixteen weeks each. It is proposed to screen premedical students after the first year of their studies. The successful students will continue their course until completion; the failures will be allowed to continue the term they are in at the time of failure and then be assigned other training. It is the intention of the Navy Department that Naval trainees, pursuing a premedical course and later assigned to medical schools, be acceptable to the schools to which ordered.

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CIVILIAN DEFENSE AFFILIATED MEDICAL UNITS

The following resolution has been passed by the Directing Board of the Procurement and Assignment Service:

As a measure of protection for the civilian population in case of enemy action, the United States Public Health Service in cooperation with the Medical Division, Office of Civilian Defense, has invited selected hospitals and medical schools to organize affiliated units of physicians in accordance with a specific table of organization. The physicians of these units are asked

to accept reserve commissions in the U. S. Public Health Service on an inactive status with the understanding that they will be called to active duty only for the following purposes:

1. To provide medical care for civilians who must be moved out of their communities of residence as the result of enemy action.

2. To provide temporary medical care in extreme emergency for military personnel in extemporized hospitals in the area.

Affiliated units will be called to active duty only on the recommendation of the respective state chiefs of Emergency Medical Service. In selecting units for activation, the state chiefs will call on those physicians who can best be spared temporarily from their civilian practices. By virtue of this arrangement, civilian medical needs will be safeguarded against haphazard withdrawal of physicians in an emergency.

The Directing Board of the Procurement and Assignment Service fully approves of the formation of aciliated units for the purpose outlined and urges all state chairmen of the Procurement and Assignment Service to facilitate the organization of these units in every way possible. Applicants for U. S. P. H. S. reserve commissions for service in the affiliated units should not be cleared with the Procurement and Assignment Service because the terms of their commissions fully protect the civilian medical needs of the communities in which the units are being organized. It is understood that the U. S. Public Health Service will accept applications only from the following groups: (1) physicians 45 years of age or older, (2) women physicians, (3) physicians of any age who are physically disqualified for military duty, (4) physicians already declared by the Procurement and Assignment Service to be essential for civilian needs.

In the case of each physician under 45 who is being considered for such a commission and who is physically fit for military duty, it is understood that the U. S. Public Health Service will obtain from the local Procurement and Assignment Service chairman concerned assurance that the physician has already been declared essential for civilian needs. The fact that Reserve Officers of the U. S. Public Health Service are now classified as 4-B by Selective Service does not affect this arrangement, since the Public Health Service has agreed that if such physicians holding inactive reserve commissions are subsequently declared by the Procurement and Assignment Service to be available for military duty, they will be permitted to resign their commissions.

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PENICILLIN

Statement Released by the Committee on Medical Research

A. N. RICHARDS, CHAIRMAN

This statement is designed to acquaint the medical profession with the progress of efforts which are being made by the Committee on Medical Research of the Office of Scientific Research and Development, by the Division of Medical Sciences of the National Research Council and by certain commercial companies to promote investigation of the therapeutic usefulness of penicillin and to increase the available supply of this remarkable substance. They were initiated and are continuing as a phase of the war effort, directed primarily toward the benefit of our armed forces.

Penicillin was discovered by Fleming in London in 1929. The first information concerning its unique therapeutic possibilities was revealed in the publications in the *Lancet* (1940 and 1941) of experimental and clinical studies by Florey, Chain and their collaborators of Oxford. The intense interest in it now manifest in this country was initiated not only by those papers but by personal communications with Professor Florey during his visit to this country in the summer of 1941.

Florey's visit was arranged by the Rockefeller Foundation. After conferences with interested members of the National Research Council and the U. S. Department of Agriculture, Florey and his colleague Heatley proceeded to the Northern Regional Laboratory of the Department of Agriculture at Peoria, Ill. where studies were at once initiated by Dr. R. D. Coghill and Dr. A. J. Moyer on cultural characteristics of Penicillium notatum, the organism which makes penicillin, and on methods of purification of that substance. These studies are still continuing and have been of great value to those who are undertaking the production of penicillin.

Returning from Peoria, Florey consulted with several commercial companies in the hope that they might undertake production developments. His efforts in this direction were supported by encouragement from the Committee on Medical Research and the National Research Council, and in the early autumn of 1941 research looking toward production was begun in the laboratories of Merck and Company, E. R. Squibb and Sons, Charles A. Pfizer and Company, the Lederle Company, and perhaps others of which we were not aware. That research has continued; the interest of other companies has been aroused until today some sixteen companies are engaged in or intend to become engaged in the production of penicillin. In no instance has production advanced beyond the pilot plant stage; in the majority it is still in the laboratory stage.

The difficulties which confront large scale production are very great. They arise chiefly from the fact that in the metabolism of the mold only very minute amounts of penicillin are formed and those only after days of growth. A yield of as much as 1 gram of the purified product from 20 liters of culture fluid would be regarded as exceptionally high. In impure solutions penicillin is unstable; it is destroyed by bacterial or other contaminations to which the culture fluids are highly susceptible. Difficulties have been encountered in choosing the most productive strains of the mold and the most suitable culture mediums, in the development of methods for ertraction and purification and in stabilization of the purified product.

The first clinical tests of penicillin in this country were reported by Dawson of Columbia in 1941. Other supplies became available in 1942, and in June of that year the Committee on Chemotherapeutic and Other Agents of the National Research Council, under the chairmanship of Dr. Chester S. Keefer, was invited to organize and supervise clinical investigations in selected hospitals, the records to be coordinated by Dr. Keefer and his committee. The costs of these studies, now proceeding in some twenty civilian institutions, are provided by contract with the Office of Scientific Research and Development, recommended by the Committee of Medical Research. The results will be published in due course.

Six weeks ago arrangements were made by the Surgeon General of the Army for clinical tests at the Bushnell General Hospital, Brigham City, Utah. There were to be found among soldiers returned from the Pacific area many cases of unhealed compound fractures, osteomyelitis and wounds with long established infections. The results have been so encouraging that plans are now in process for undertaking similar wound studies in ten general army hospitals and venereal disease studies in six. A similar though less extensive plan will be pursued by the Navy.

The results of these investigations thus far have completely upheld the early promise contained in the reports of Florey, Chain and their collaborators. More than 300 patients have been or are being treated with penicillin. There is good reason for the belief that it is far superior to any of the sulfonamides in the treatment of Staphylococcus aureus infections with and without bacteremia, including acute and chronic osteomyelitis, cellulitis, carbuncles of the lip and face, pneumonia and empyema, infected wounds and burns. It is also extremely effective in the treatment of hemolytic streptococcus, pneumococcus and gonococcus infections which are resistant to sulfonamides. It has not been found effective in the treatment of subacute bacterial endocarditis. Studies of the results of its local application are still inadequate.

Properly made preparations have given no toxic reactions, even from the largest dosage. Its rapid excretion in the urine necessitates frequent administration when given intravenously or intramuscularly.

The work of the coming three months can be expected to result in clearer definition of the conditions in military medicine in which penicillin will be most useful, of its limitations and of the most advantageous as well as the most economical methods of its administration. At the same time intense efforts are being made by manufacturers to expand production to a point at which it may be made available in significant quantities not only for casualties returned to this country but also for our forces overseas.

Unless an expansion of production takes place at a greater rate than can now be foreseen, the supply for civilian medical needs in the near future will be exceedingly limited.

AMERICAN SOLDIERS ESCAPE TYPHUS

Although more than 100,000 cases of typhus fever occurred in North Africa in 1942, American military forces in that region have come through almost untouched by this disease, according to statisticians of the Metropolitan Life Insurance Company. In Tunisia in 1942 there were more than 16,000 cases, in Algiers more than 35,000 cases, in French Morocco 26,000 cases and in Egypt about 23,000 cases. It is likely that the favorable situation will continue with regard to our military forces in that region, because our military physicians are alert to the dangers from this disease, which is still a menace to the health of the civilian population.

A potentially dangerous situation exists in the battle areas and occupied regions of eastern Europe, but the facts are carefully concealed by German censorship. Even in Germany itself, which for generations has been free from typhus, numerous cases have been reported, the first seven weeks of 1943 showing 800, or nearly twice the number of cases, for the first quarter of 1942. There were more cases in Rumania in 1942 than at any time since 1936; for February 1943 the cases were said to have been 40 per cent greater than in the preceding February. Typhus is more prevalent in Bulgaria and in Hungary this spring than in 1942; some outbreaks have occurred even in France. The starved and ragged populations of eastern Europe are fertile soil for the spread of typhus. Until the axis armies are cleaned out of these countries and order and public health administration restored and the people get enough food and clothing, typhus will not be brought under control as it is among our own troops.

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FIRST WOMAN PHYSICIAN COMMISSIONED UNDER NEW LAW

Major Margaret D. Craighill, former dean of the Woman's Medical College in Philadelphia, who is the first woman physician to be commissioned directly in the Army under recently enacted legislation (THE JOURNAL, May 8, p. 123), will soon report for duty in the preventive medicine section of the Surgeon General's Office, Washington, D. C. According to the New York *Times,* Dr. Craighill's father and grandfather, Col. William E. Craighill and Gen. William P. Craighill respectively, were West Point graduates. Dr. Craighill was born in Southport, N. C., and grew up in Mobile, Ala., and in Portland, Maine. She received an A.B. degree from Wisconsin University in 1920 and an M.S. in 1921, and an M.D. degree from Johns Hopkins University in 1924. The next year she interned there in gynecology and surgery. She was assistant in pathology at Yale University Medical School from 1925 to 1926 and assistant resident in gynecology at Johns Hopkins from 1926 to 1928. Dr. Craighill is a specialist certified by the American Board of Obstetrics and Gynecology.

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DR. PAUL W. DAVIS REPORTED MISSING

According to the Peoria *Star,* Dr. Paul Wilson Davis of Jennings, a suburb of St. Louis, and a first lieutenant in the Civil Air Patrol, has been missing since February 26, when he took off in a plane with an observer and with other planes as escorts to a convoy along the Atlantic coast. The planes became separated while patrolling. Lieutenant Davis radioed a distress message, but the other fliers and the Coast Guard after searching the area were unable to find any trace of the plane and its occupants. It is said that Mrs. Davis, the wife, and the young son in St. Louis were notified from Washington. Dr. Davis entered the Civil Air Patrol last September. He was serving both as a pilot and as base physician. He was born in Chicago in 1912, later lived in Peoria and graduated in medicine at St. Louis University School of Medicine in 1939. He had an internship at King County Hospital, Seattle, and a residency at Methodist Hospital in Peoria. He was in practice in Jennings before joining the Civil Air Patrol.

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FEMALE PHYSICIANS

On April 16 the President signed a bill enabling the commissioning of women in the Medical Corps for duty as physicians. No similar authority exists with regard to dentists or veterinarians. The procedure outlined for the processing of male physicians will apply to the proc-

essing of female physicians. No female physician will be processed until the District Office has received her availability clearance form from the state Procurement and Assignment physician chairman. It is anticipated that some delay may ensue before the Surgeon General will be in a position to recommend female physicians for appointment, because regulations and forms must be prepared and issued. Whereas district offices are authorized now to process any female physicians whose availability may be declared by the Procurement and Assignment Service, such candidates should be advised that there will probably be a considerable time lag in the consideration of their cases by the Surgeon General. Until further instructions, district offices will use the same forms and procedures in processing female physicians as are in use for male physicians. Female physicians processed and appointed will count against, and are not in addition to, the total figure for physicians in the Surgeon General's 1943 program.

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QUINACRINE PLACED UNDER ALLOCATION

Quinacrine, a synthetic chemical having antimalarial properties similar to those of quinine, which is now almost unobtainable, was placed under allocation on April 2 by the War Production Board through issuance of General Preference Order M-306. Quinacrine is also produced under the trade name of atabrine. A producer seeking authorzation to deliver or use quinacrine in any month beginning with May 1943 must file application with the War Production Board on form PD-602 by the 20th of the preceding month. In addition, each producer is required to file by the 5th of each month, beginning with May, with WPB on form PD-602 a list of civilian customers to whom he made deliveries in the preceding month. A producer is defined in the order as a person who produces or imports quinacrine or has it prepared for him or who makes quinacrine tablets or other dosage forms of quinacrine except ampules.

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SOLDIERS TO HAVE FREE LEGAL AID

Heretofore a soldier who needed legal advice went to his company commander, the post chaplain, or the Red Cross representative. Under a new plan sponsored by the War Department and the American Bar Association, a commissioned officer who is also a licensed attorney is appointed the legal assistance officer at each post, camp or station. The legal assistance officer will have the cooperation and help of volunteer civilian lawyers from nearby communities who have been chosen by the state bar association committee on war work for that purpose. The only barriers put on the aid offered is that the legal assistance officer may not collect debts, advise or assist military personnel who are or might be subject to court-martial investigation or charges, and he may not appear before civil courts, boards or commissions as attorney for the soldier or officer. All talks and dealings between military personnel and the legal assistance officer will be considered strictly confidential and personal. No superior officer may order disclosure of any information confided to the legal assistance officer. Free legal aid for all military and civilian personnel of Carlisle Barracks is now guaranteed under a recent War Department order authorizing the appointment of a legal assistance officer there. Capt. Henry E. White, post judge advocate, has been given this additional duty.

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RECIPROCAL MEDICAL ARRANGEMENTS FOR CANADIAN AND UNITED STATES SOLDIERS

Reciprocal medical arrangements have been made for Canadian and American soldiers whereby personnel of the U. S. armed forces while on duty, leave or furlough in Canada who cannot obtain medical or dental treatment from the United States facilities in Canada will receive free such treatment as is necessary for immediate requirement from the Canadian medical and dental services. If treatment or hospitalization will exceed thirty days, arrangements will be made for transfer, where possible, to the United States. Canadians in the armed forces in the United States who require medical or dental attention will report to the nearest U. S. naval or army hospital, the nearest veterans hospital or Veterans Administration office or to the nearest medical representative of the Veterans Administration. If none of these facilities are immediately available, the Canadian

personnel will be admitted to civilian hospitals in the United States. The Canadian legation in Washington will be notified and bills for treatment will be forwarded to the Surgeon General of the U. S. Army, Washington, D. C. Officers of the U. S. Army admitted to Canadian hospitals will pay $1 a day subsistence while patients.

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MALARIA FIGHTERS IN CONSTRUCTION BATTALIONS

The U. S. Navy started courses in malaria control for the training of medical officers and hospital corpsmen at the Navy Medical School, Bethesda, Md., as soon as the war in the Pacific began, and malaria control units are now a part of all naval and marine forces in war zones in which malaria is present. These units comprise malariologists, entomologists, sanitary engineers and hospital technicians. Now the Naval Construction Battalions which accompany combat forces have organized malaria control groups within their own battalions, thus providing 110 trained men to fight malaria the moment a construction battalion moves in. A chief petty officer and nine other petty officers, all especially trained in malaria control, in addition to their regular Seabee training, head parties of 10 carefully selected and well trained men each, whose duty it is primarily to eradicate sources of malaria infection. These men, however, are part of the regular construction battalion and when not engaged in malaria control take part in other work.

The training of Seabee men for malaria control which is carried out at Camp Peary, Va., includes among other things instruction in draining, spraying and ditching and in individual precautions against malaria. The prevention of malaria in men landing in an infected tropical area begins with the wearing of head nets and gloves, the use of mosquito repellents and the taking of quinine or atabrine. The spraying of huts, and tents, the screening of shelters and the segregation of infected natives are done when possible.

Rear Admr. Ross T. McIntire, Surgeon General of the Navy, considers, the *Army and Navy Journal* of May 1 says, that malaria is the most serious medical problem of the war. Admiral McIntire has emphasized the need of the navy for medical officers who are skilled in the treatment and prevention of malaria. Commanding officers in tropical areas consider that tools and equipment for malaria control are almost as important as ammunition and food. The Secretary of the Navy, Frank Knox, has directed all navy unit commanders to give disease control priority in operations in tropical combat zones in keeping with the military situation. The Navy has recommended to all medical schools that emphasis be placed in their instruction on the study of tropical diseases, particularly for those students who plan to enter the navy medical corps.

SMALLPOX VACCINATIONS GIVEN TO 36,000 IN DISTRICT OF COLUMBIA

About 36,000 residents of Washington, D. C., most of them employes of the federal government, have been vaccinated against smallpox since last December, the District of Columbia Health Department announced. About 10,000 of these vaccinations were given by physicians of the health department and the rest by the medical staffs of various federal and District agencies.

The outbreak of smallpox in nearby Pennsylvania stimulated the current vaccination drive, but Dr. George C. Ruhland, health officer of the District of Columbia, is still urging that all persons living there who have never been vaccinated should take this health protection immediately.

The reason is that Washington is the crossroads of the world in war activities. People are coming not world, many of them from regions where vaccination only from the entire nation but from all over the against smallpox is not practiced, and this increases the danger to unvaccinated persons there.

No case of smallpox has been reported in Washington in the past ten years. — *Science News Letter*, March 13, 1943.

TUBERCULOSIS IN WAR TIMES

Fire is fire, no matter what the fuel, but when gasoline is thrown on a flame a dangerous explosion results. Tuberculosis is the same disease now as in peacetime, but war invariably favors a flare-up of tuberculosis and creates new difficulties for those who must combat the blaze. The hard-pressed general practitioner is a seasoned fire-fighter whose aid must be enlisted and whose effort must be supported if smoldering tuberculosis, lately coming under control, is to be prevented from spreading into a serious conflagration. Even veteran firemen, however, periodically examine their equipment and drill themselves to increase their efficiency.

Original Articles

THE FUTURE OF MEDICINE

President's Address

EDWARD H. WELD, M. D.
ROCKFORD

It is an established custom that retiring Presidents give a short address at the conclusion of their services. It is, also, an established custom that each retiring President has always spoken on the general topic of the future of medicine. This subject can be approached in many ways and lends itself to a resume of the present statis of medical practice, a forecast of the future of medicine, and a summary of the part that the Illinois State Medical Society may have in shaping the future of medicine.

We might first delve into the historical background as your past President, Dr. James Hutton did in his splendid address before this Society two years ago. An abstract of that speech shows us that the practice of medicine in this State was built up by staunch individualists who realized that only pooling their efforts so as to standardize medical education, hospital work and the general practice of medicine, could they hope to achieve the best possible medical service for all the people. It was to this end, that the Illinois State Medical Society was formed 103 years ago by a group of individuals who had the common good and welfare of the people of Illinois in constant view. These groups of men and women banded together and grouped together as we are banded and grouped together in an unselfish manner for the past five score and three years.

Given at the 103rd Annual Meeting, Chicago, May 19, 1943

The accomplishments of the past century up to the present time have given us improved medical practice. Medical education has gone forward and kept pace with all advances of the World at large. It has been a cooperative effort where the medical men have combined to unselfishly give to the World fruits of their labors as is evidenced by the discovery of insulin in the treatment of diabetes, by the treatment of pernicious anemia with the essential hormones, but the wonderful research that is developing as rapidly about those diseases which have to do with vitamin deficiency. With the rapid advance of a better understanding of the endocrine disturbances of life and by that magnificent achievement in chemical therapy known to the World as the sulphonomides. These researches as well as many others which I do not have time to enumerate, have enriched the lives of all of us, and have added a spirit of interest and enthusiasm among the medical profession. A spirit of thankfulness that we are members of such a wonderful profession. A spirit of intense satisfaction that we can help in the building up of human life in all of its endeavors. A spirit of God given thankfulness that we are blessed with a roll in civilization that has to do with the saving of human life, and not with its destruction. The good doctor works all the time to see that proper mating is done from healthy individuals, that the baby has protection from infectious diseases, that his nutrition is ample, that his environment is the best possible, that his school life is guarded against the hazards of adolescence and that he is taught the fundamental principles of right living. The medical

profession seeks to guide and guard his working hours and has been evidenced by the enormous interest shown industrial medicine. The medical profession is showing a profound interest in the later years of life, trying to protect those years against the hardship and worries of life, to improve the housing, the food and general environment of the aged, and to generally improve the happiness, the fun of living and the length of life to the greatest possible extent. We have never, Thank God, taught or fostered anything but the lengthening of the span of human life and the advancement of human happiness.

The practice of medicine as I have seen it in my generation is gradually changing. Life is changed. Without change there is death, therefore, the practice of medicine must change. There is more State medicine, more socialized medicine. We are going to have a gradual change in our method of living and our method of practice, this is inevitable. We have gone along with many of the reforms that have been instituted in the past generation, and we are firmly convinced that "haste makes waste", and that changes, if they are going to be for the good, should be gradual. I am firmly convinced that one of the greatest powers for satisfaction in life, and the joy of living lies in the knowledge within the individual that he has done something for humanity. If he is endeavoring to do the right thing in a religious and moral sense, if he is endeavoring to do the right thing as far as protecting himself and family against the hazards of want, and if he is accomplishing something to this end then he gets a satisfaction out of life that is second to none. A satisfaction that he cannot acquire by having things given him, and I believe that it is this satisfaction, this individual way of life, this democratic way of life that we are fighting for.

In the practice of medicine there is room for improvement, many things are not done right. We should give the best possible service to all the people all the time. We are going to have changes, but the changes should be gradual and each change should have thoughtful consideration. The medical profession itself should solve its own problems. It is possible that we should be prodded occasionally by outside influences, but the fundamental interest should rest with the medical profession and the medical men and women should not be backward in taking their share of responsibility because it is to them that the people look for guidance in the safe guarding of that most precious of all heritage of all individuals, namely the safe guarding of their own health.

Our first consideration should be to give everything we have in every possible way to the winning of the War. A War that will be won on the far flung battle fields where we desire above all else that no suffering exist and no loss of life occur because of the lack of proper medical care. We pledge ourselves to the effort with all the energy and resources at our command.

We realize that the War will be won by keeping the people on the home front as healthy as possible. This can be done by contributing in every possible way to aid in all problems of National health and to give our patients our best service at all times. This emergency presents an opportunity to drive home the well known truth of right living, proper nutrition, housing and sanitation.

The practice of medicine has many ramifications into every corner of our national and economic life. We know that we are often accused of failures on our part when the trouble really lies in the economical set-up of the individual. Rules and regulations that are permulated and that are stressed in an emergency often leave their indelible mark upon civilization after the emergency has passed. We hope that we can preserve a standard of practice worthy of the respect of our returning colleagues, but it is with fear and trembling that we look into the future and see the gradual changes that are bound to take place. Most of these changes as they have taken place have been for the good of mankind. To enumerate some of them, we have first, our pauper class, hospitals for the mentally sick, schools for the deaf, dumb, and blind, for the feeble minded, epileptics, soldiers and sailors orphans homes, veterans hospitals, county and municipal hospitals, tuberculosis sanitarium, the emergency relief set-up the NYA, the division for the crippled children, the rehabilitation of those that can be rehabilitated, old age assistance, aid to dependent children, maternal welfare, cancer control, control and treatment of venereal diseases, county health units, industrial health

aids where corporations are now practicing medicine and many others. These in themselves are often good. The anti-tuberculosis movement has accomplished a wonderful purpose. In our county it has reduced the death rate from 128 per 100,000 to 15 per 100,000. This has been done with definite incentive and stimulus of the medical profession assisted by various other organizations and so we can go down the list and find a growing tendency for the State to care for and preserve the health of its citizens. How far should this tendency be carried out? It looks as though from the above renumerated agencies that they control them not only from birth, not only from pre-natal care but from pre-marriage mating and they are cared for until they die. Of course all of this costs money. It is stated that the national debt per individual, every man, woman and child is two thousand dollars each. The War is costing ten million dollars an hour. In view of the enormous increase of our National debt is it not time that we begin to curtail our expenses? Is it not time that our Federal Government exerted some old fashion New England thrift and not continually force money upon our State with the idea that we can have it if we match it? You know and I know that the money that they give back to the State of Illinois, if we will match it, is money that came out of the State of Illinois less of course the handling charge. At times the multiplicity of our national endeavors are so ramifying that they bring nothing but confusion into the minds of its citizens. I prefer to look upon the Nation and State as being controlled by the same economical philosophy that the family is on Main Street. Most of these families have learned in the past that it is true and honest philosophy of American Life to pay their bills, to gradually buy their homes and to pay for the services that they receive and to forego those luxuries that they can not pay for. I believe that the parents of the house on Main Street can spoil their children by giving them too much, by doing too much for them. By doing too much for them they not only take away their initiative, but they destroy for them the joy and satisfaction of life. The children of the parents of the little house on C. Street are no different from the children of Uncle Sam, and I hope that we will not let the fundamental principals of real American life cloud the issue when we hear the promises that are made for a more abundant life. All of us want a more abundant life, we want it for everyone. We differ only in the way we feel that this more abundant life can be secured. The securing of the abundant life rests with the individual. Can you make a child happy, healthy, and full of the joy of living by giving him everything he desires? I don't believe you can.

I recite these instances of Governmental control of the practice of medicine and of Governmental control of its citizens not necessarily to condemn them but to call your attention to that direction of human living and to ask that you carefully weigh and consider all new changes that are advocated before adopting them and that you revalue and condense and simplify many of the existing agencies and bureaus that now exist.

What then is the future of medicine? Will it be Socialized medicine? Will American business become Federalized business or Socialized business? The extent that we adopt Socialized Medicine will depend upon the extent that we develop a socialized system of Government. Many of our citizens are deeply concerned toward the firm trend that has set in toward the socialization of both business and professional activities. The announced motive of such endeavor is to adequately provide the essential needs of life for all its citizens. This will require careful planning and as the changes have been rapid in the past few years they will become more accelerated in the post war period. It is time now to plan for the future of medicine, to see that the pendulum does not swing too far in any one direction. A committee on post war planning and security could well co-operate with men of other professions and business enterprises so that our American way of life will be stabilized in a progressive, clear and concise manner. We should take an active part in the politics of our local, state and national government so that we can help develop and shape the coming trend of thought. We should make a thorough study of hospital insurance and of all plans for prepayment of medical services. The medical profession realizes their sacred responsibility and will take an active part in the development of the future of medicine along the lines that will give the best possible medical service to all the

people. We must not fail to fight not only for our freedom as individuals but for the freedom of all our citizens because none of us want to be regimented. We want the American Way of Life.

"There was a dream — that men could one day speak the thought of their own choosing. There was a hope that men could one day stroll through streets at evening unafraid. There was a prayer — that each could speak to his own God — in his own church. That dream, that hope, that prayer became America. Great strength, youthful heart, vast enterprise, hard work made it so. Now that same America is the dream — the hope — the prayer of the world. Our freedom, its dream. Our strength, its hope. Our swift race against time, its prayer. We must not fail the world now. We must not fail to share our freedom with it afterwards. Keep Singing, Keep Working, and Fight for America."

ANALYSIS OF CURRENT TRENDS IN THE CONTROL OF MEDICINE

J. BEN ROBINSON
President, American Dental Association
BALTIMORE

Changed attitudes toward health services that have occurred in our social consciousness during the past few years and the impact of the war struggle upon the normal activities, thinking and behavior of the masses have created new health problems which the professions of medicine and dentistry should recognize and consider. This altered public attitude suggests the need for a reappraisal of the relationships of these professions to current health requirements and the necessity for considering some plan or plans that would provide an adjustment of old programs to new conditions — if, in the opinion of competent professional men, realignments or retrenchments are indicated. The health problems confronting dentistry and medicine are similar; they may vary somewhat in degree and in form, but the fundamental principles underlying them are basically the same. It would seem, therefore, that the two professions may derive mutual benefit from a frank discussion of their common problems.

Presented at the National Conference on Medical Service, Chicago, Illinois, February 14, 1943.

Those of us who have practiced our professions for the past quarter of a century cannot fail to recognize the far-reaching social changes that have taken place during that period. No matter what our personal opinions may be, or how much we may disagree with the changed social outlook, or how much we deplore current trends that portend further modifications of our social relationships, we must recognize the incontestable reality that deep and fundamental changes have occurred in our social philosophy and that the minds of our citizens are prepared for still further changes.

There has been a deep and sincere concern expressed by many leading citizens because of the firm trend that has set in toward the socialization of our business and professional activities. The motive of these efforts as announced by their sponsors is to provide adequately for the essential needs of the whole people. This concept projects a new point of view and as a consequence public favor is shifting its emphasis from the special interests of the individual to the communal interests of the group; instead of depending on its few stronger members for strength, society has come to recognize that its powers and security depend upon the maximum efficiency of the masses. Some of us, noting how rapidly this changing concept has developed during recent years, have concluded that it issues from the influence of certain political theories now in vogue and have assumed that the socialization concept appeared abruptly under the aegis of a political regime and that it will vanish as it came.

The term *socialization* should be defined, since its use is liable to instil fear of harmful regimentation among those whom it involves. An acceptable meaning of the term, and the sense in which it is used in this discussion, is the broadening of human opportunity to the degree that all deserving members of society may, by ethical processes, secure those essential things of life without which they cannot live happily.

There is no denying the fact that support for the socialization of health services has recently gained much strength. For many years there has been a growing insistence that health is the most essential of all the good things of life, that society in the over-all is not receiving health

care adequate to the needs of the whole population, and that some means should be devised by which preventive and curative health services may be distributed evenly and equitably to the whole people. There are those who regard these theories and the current insistence for action, as a passing fancy. Let us take a moment to test this assumption.

Some of you studied sociology in your preprofessional collegiate experience. If you go back in that experience as far as I, you will recall the Social Settlements of forty years ago, and you will remember that these institutions — Hull House right here in Chicago is an instance — were welfare centers, financed by philanthropy and administered by altruistic workers committed to the purpose of providing relief to the suffering, the underprivileged and the unfortunate. You will recall how these centers grew into movements and that soon the health aspect of this welfare program became as important as were clothing, food, and shelter. These movements gathered momentum rapidly and soon the government took notice of them. Typical milestones in the progress of the socialization concept were the White House Conference on the Care of Dependent Children, called in 1909 by Theodore Roosevelt; the International Conference of Child Welfare Experts, called in 1919 by Woodrow Wilson; and the White House Conference on Child Health and Protection, called in 1930 by Herbert Hoover. The emphasis on the importance of health in all these deliberations aroused the people to a realization of the obvious need for some organized effort to produce a better over-all health program in the United States. Scores of health study projects were activated to test the situation, the best known of which is the study conducted by the Committee on the Costs of Medical Care. The evidence presented and the conclusions arrived at by this committee were so compelling that they attracted the active interest of the federal government. Compulsory health insurance, suggested by the government, proved unpopular; but the Social Security Act of 1935 included sufficient support, through various assistance grants, to put the federal government firmly and permanently in the health promotion field. Assistance grants allocated to the various states have stimulated the rapidly growing state health programs that are gradually expanding their activities to include more and more personal services. These various activities have served to create an over-all formidable picture of a growing socialization of health services.

The realities of the health picture reveal that there is a very considerable number of our population who are physically unfit. This group does not include necessarily those currently suffering from pain or those whose lives are immediately imperiled by disease. An estimated one-quarter of all the youth of teen age and under in the United States are suffering from physical disabilities or handicaps, including mental deficiencies. This tremendous volume of physical defectives has excited the active interest and sympathy of welfare workers and the support of public officials, and now challenges not only our skills as professional men but our resourcefulness as members of altruistic professions.

It must not be assumed that I am advocating any changes in the traditional form of medical and dental health services; nor am I predicting or inviting an altered system of health service distribution. I am merely pointing out trends along new and different lines and am attempting to show how a new concept has developed that the professions should recognize and dispose of in the best interest of society as a whole.

It is apparent that the trend toward a more universal health service is growing day by day. There are indications also that some form of national health plan may be inaugurated soon in this country. Should we be confronted by such an eventuality the most important single consideration in connection with it is that the professions shall take the leading part. Certainly the best interests of the public require that the medical and dental professions shall occupy a prominent place in the planning of any scheme of socialization of the health services that may be promulgated and developed under the sponsorship of government, and that the direction of such a movement shall rest upon the authority and the judgment of the professional men. They understand the over-all and the intimate aspects of the health problem in all its implications and complications much better than laymen, and they are fully capable of extending their thinking

into the fields of sociology, economics and administration, in such a fashion as to render the best type of judgment on any changes that may be desirable. Unfortunately there is a tendency in certain quarters to impugn the motives and the integrity of the professions. The assumption is that they are vested interests and because they are engaged in health work as a vocation it is alleged that they are concerned only with their personal interests. Such a conclusion is absurd. The professions are qualified educationally and temperamentally to engage satisfactorily, effectively and ethically in planning for any federal or state health project that may be desirable.

The most important safeguard to be thrown around any enlargement of our health programs is the maintenance of adequate standards in professional education and practice. Nothing could be more detrimental to the American public than for the health standards that now exist to be disturbed or injured. The educational standards in the medical and dental professions have been established on a high level of quality that guarantees the competency of those to whom the health and lives of our people are entrusted. The elevation of educational standards, the broadening of requirements, and the extension of the time to qualify candidates for practice are not artificial arrangements designed to favor the professions. These advances have been made in order to include in the curriculums the essential elements of the rapidly expanding scopes of professional knowledge and skills. To step down these standards at this time would mean to impair the efficiency and usefulness of our physicians and dentists and to jeopardize the future of all health service. I do not make a plea for the mere preservation of these standards; instead I make the observation that the American way of life will not be satisfied with less than these standards ensure.

It is equally important to protect the existing high standards in medical and dental practice. Laws governing the practice of the health professions have advanced in quality and authority until incompetency among practitioners has reached an irreducible minimum. Health practice laws were never designed primarily for the benefit of the practitioner but rather for the protection of the public from abuse by the charlatan and the quack. The weakening of existing laws in any way would constitute an assault upon the high quality of medical and dental practice to which our people are accustomed and to which they are entitled.

As an indication of the danger inherent in efforts to provide health services at the expense of quality standards in practice, I shall refer to a recent significant occurrence. A suggestion, if not a recommendation, was issued a short while ago from Washington to the governors of states and to legislatures that certain emergency measures be enacted to make possible the suspension of medical and dental practice acts for the duration. This directive is based on the assumption that the critical shortages of physicians and dentists in certain areas can be corrected only through a plan of inter-state adjustments. The proposed plan provides that critical shortage areas may be supplied with health services by transferring physicians and dentists from one state to another. An analysis of these conditions shows that shortages in health service supply have been created in part by the tremendous drain made on dental and medical manpower to meet the needs of the armed forces, and in part by population shifts toward war industry areas. More than forty thousand physicians and thirteen thousand dentists have been dislocated thus far from their communities. The withdrawl of eighteen per cent of the normal professional manpower of this country must of necessity deprive the people of the same intimate and ready medical and dental attention to which they have been accustomed; and the migration of war workers has shifted health pressures to certain focal points where adequate health care does not exist. The withdrawal from private practice of physicians and dentists by the armed forces was generally uniform throughout the United States; hence a uniform shortage of health service among the states ensued. Because of these uniform shortages any artificial movement of physicians and dentists from one state to another would probably only shift acute shortages from one place to another. Experience has shown that pressure areas created by the movements of war workers can be provided for through intra-state programs without recourse to inter-state planning. Because of these facts,

representatives of the dental profession have stated that they do not believe the suspension of dental practice acts of the various states to be necessary. They contend that any uneven distribution of dental manpower can be adjusted within states and that the small good that would accrue from suspending dental laws would not justify the risk of permanently nullifying safeguards that have been years in building.

The American Dental Association has followed carefully the changes in social concepts of recent years. It has attempted to keep in touch with all health promotional schemes and it has offered to assist any sound movement; it has tried also to deter those trends that offer to injure health standards. It has established a branch office in Washington under the auspices of its War Service Committee, whose duty it is to keep intimately in touch with every movement that tends to affect the quality of service which dentists are prepared to give. It is the duty of this Committee to cooperate fully with every activity designed to promote the war effort; to note any recommendations from any source that might reflect upon the quality of dental education or dental practice, and to take whatever steps are necessary to prevent the development of any situation that would offer to reflect unfavorably on the services the profession is now rendering to either the armed forces or the civil population.

Another activity developed by the A.D.A. within the year is the creation of a national Council on Dental Health. The duty of the Council is to take cognizance of the over-all dental health situation in the United States, to study it, to analyze it, and to correlate dentistry's functions with it wherever necessary and possible. This plan does not mean that dentistry is engaged in promoting the socialization of health services; the Council has no authority to commit American dentistry to any socialized program, nor has it any desire to do so. It is a factfinding body and an advisory group with respect to all movements that tend to divert the course of dentistry into new and untried channels. It is now making a study of a number of important aspects of the over-all health picture such as social trends, low income groups, prepayment plans, industrial dental hygiene, state and local health programs, organized national health projects, research in public dental health, and a caries control program. The last named activity is designed to produce a plan or program of service that may be effective in the prevention or control of the wide-spread prevalence of dental caries.

The medical and dental professions are faced with a grave emergency and a profound responsibility. I have every confidence that the leaders in the American Medical Association and the American Dental Association are equal to the task. The situation requires earnest study of, and unselfish participation in, any venture that offers to benefit humanity, and it requires courage and faith on the part of our leaders to project creative thinking into an unpredictable post-war situation that will undoubtedly call for the best that intelligent, resourceful, hopeful men can give. I think our professions have leaders with both courage and faith.

42 S. Greene St.

THE STANDARDIZATION OF MATERNITY FACILITIES IN ILLINOIS HOSPITALS

HOWARD L. PENNING, M.D.
SPRINGFIELD

As we review the Illinois maternity hospital standardization program, we see that some of the most impressive items concern the problem of increased hospital obstetrics. Because of the effect of this situation upon hospitals and upon the administration of the program itself, I should like to discuss, along with the regulation of maternity facilities, the need for hospital expansion to keep pace with the growing demands upon those facilities.

Soon after the organization of the Maternal Welfare Committee in 1937 it was realized that many of the problems affecting maternal mortality and morbidity were associated with hospital facilities. Chicago recognized this fact two years earlier and took steps to remedy the situation by the adoption of regulations by the Chicago Health Department. Consequently, the attention

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Presented before the joint meeting of the Sections on Public Health and Hygiene and Pediatrics, 102nd annual meeting, Illinois State Medical Society, Springfield, May 21, 1942.

of the Maternal Welfare Committee was directed primarily toward obstetrics in downstate Illinois.

An examination of existing statutes revealed the fact that a licensing act already existed. This was the Maternity Act of 1915. It provided for licensure of all hospitals and institutions receiving maternity cases, and was administered by the Division of Child Welfare of the Department of Public Welfare as an instrument to control the adoption of children.

A movement was then begun to modify the Maternity Act, and the 1939 session of the General Assembly amended the Act, placing licensing responsibility in the Department of Public Health. The administration of this new duty was placed in the Division of Child Hygiene. The adoption features of the Act were left a function of the Welfare Department.

A commission was appointed to draw up standards for the use of the Health Department in the appraisal of hospital facilities and the granting of licenses. This group was composed of obstetricians, pediatricians, representatives of the American College of Surgeons, the American Hospital Association, and the State Medical Society. The regulations it formulated were approved by the Director of the Department of Public Health and published in a bulletin entitled "The Maternity Hospital Law and Requirements for Licensure." This bulletin was issued to hospitals on January 1, 1940.

The standards concern medical facilities as well as plumbing and sanitation. The sanitary regulations are uniform for all hospitals, but the medical requirements are graduated according to the volume of obstetrics performed in the hospital. There are general provisions required of all hospitals regardless of size. When the volume of obstetrics reaches 150 deliveries per year, the regulations call for additional facilities. Again, when the work exceeds 350 deliveries per year, better accommodations are required. This unique method of adapting requirements to the volume of the actual work performed has proved very satisfactory. As we shall demonstrate later, the gross size of the hospital is no indication of the number of maternity cases treated.

Appraisal of hospitals began in March, 1940. Each appraisal was made by a physician with obstetrical training, aided by a sanitary engineer. Provisional licenses were subsequently issued to all hospitals operating and previously licensed by the Welfare Department. Recommendations for changes to correct the deficiencies were attached to the licenses. The first year's survey was completed in November, 1940.

The findings of that survey are very interesting. Hospitals of all sizes and descriptions were found, ranging all the way from a one-bed institution in the back of a doctor's office to some of the largest hospitals in the country. The following slides show the distribution of the hospitals in the state according to total capacity and also as to volume of maternity work. The first slide divides hospitals into six divisions according to the number of beds. Note particularly the discrepancy between the average number of deliveries for each group and the high and low figures.

HOSPITALS ACCORDING TO BEDS

		No. of Deliveries		
No.	Beds	Average	Largest	Smallest
21	1-10	31	98	3
38	11-25	61	256	11
41	25-50	133.5	332	19
64	51-100	282.4	605	15
51	101-200	597	1936	61
25	Over 200	1076.5	4610	249

The second slide classifies institutions according to the volume of obstetrics. Here again your attention is called to the size of the hospital as compared with the number of deliveries. In the category of 1-25 deliveries, the size ranges from one to 100 beds. The second group varies from eight to 100 beds. All classes show a wide variation in the gross capacity of the institutions.

HOSPITALS ACCORDING TO DELIVERIES

			No. of Beds	
No.	Deliveries	Average	Largest	Smallest
25	1-25	15.5	100	1
19	26-50	25.6	100	8
31	51-100	33.6	115	5
24	101-150	39.1	100	11
58	151-350	78.7	242	22
68	351-1000	158.6	465	60
15	1000 +	484.7	3300	117

We feel that these findings justify our system of graduated requirements based on the volume of obstetrical work.

The defects in medical facilities found in the first survey have been summarized, and the chief findings will be published with the paper. Among the significant findings it is noted that 85.7 per cent of the hospitals did not require

physical examinations of their personnel. Many larger hospitals examined the student nurses but not the staff nurses and other personnel. Very few hospitals required a bill of good health from their food handlers. Recently a simple form for recording physical examinations has been adopted and is now furnished on request by the Health Department. This has led to widespread use in a majority of hospitals. Superintendents have adopted this practice for the entire hospital personnel as a sound method of preventive medicine.

Obstetrical records were deficient or totally lacking in 48 per cent of the cases. This was true in greater numbers among the smaller hospitals, but 20 per cent of the hospitals having over 200 beds also had this deficiency. Craniotomy instruments were lacking in 36.08 per cent of the cases. Instances were reported of Caesarian section being performed to deliver dead babies and of mutilation of mothers where a cranoclast was not available. Inadequate segregation of obstetrical patients was present in 11.25 per cent of the hospitals. The lack of any type of incubator or heated bassinet was a finding in 21.31 per cent of the institutions. Infant clothing was brought to the hospital by parents in 20.07 per cent of the instances. This was chiefly true in the smaller divisions, where over 50 per cent did not furnish the baby clothes. Some very bad situations in this regard were found. One hospital with over 300 deliveries per year had all parents bring each baby's clothes to the hospital and return for them when they were soiled. One hospital had a cardboard box under each bassinet, and the soiled diapers were allowed to accumulate until the family called to take them home and launder them. Child visitors were permitted in 21.78 per cent of the hospitals. This defect was chiefly lacking in the larger hospitals. In 16.07 per cent, pasteurized milk was not used. Deliveries were done in the operating room in 12.41 per cent. This was primarily found in hospitals under 25 beds, but occurred in 6.16 per cent of hospitals from 51 to 100 beds. In 8.63 per cent of the institutions, facilities for infusion and transfusion were lacking. In a small number of hospitals a nursery was not provided, and babies were shuttled back and forth from one place to another. In some, they were kept in the operating room, the sterilizing room, and even in the utility room.

The greatest difficulty seemed to be in the small industrial hospital. In these localities the hospital is maintained chiefly by a contract practice with a mining concern or other industry. The building of the hospital was originally determined by the need for facilities to care for accident cases. Consequently most of the patients were chronic injuries and infections. The obstetric service has been more or less forced upon the hospital, and there are no facilities for it. Many hospitals said they did not want it. Fortunately, the number of births in these institutions is generally small, but also the number of disasters seems small to them so that they feel their results are good. Another feature rather common in this group is the presence of untrained nurses. Often they have had no formal training whatever and are local girls who have been "trained" by the physician owning the hospital. One 40-bed hospital had only one registered nurse.

On the whole, the maternity facilities in Illinois hospitals compared very well with those found in other states. The serious defects most generally found involved plumbing and sanitation. Due to the fact that Illinois does not have a standard plumbing code, plumbing requirements vary from city to city and in many places are controlled very little or not at all. Consequently, the section of the maternity regulations concerned with plumbing constitute a code for all hospitals. Under this section, plumbing in all parts of a general hospital is involved. Much obsolete equipment and many faulty fixtures, cross-connections, defective water and sewage systems were found. Hospitals were quick to realize the seriousness of these defects, and in a majority of cases repairs were immediately started. In many instances these involved a considerable outlay of money on the part of the hospital. Fortunately, most of these installations were made prior to the present war effort, when equipment was available. Such is not now the case, and new hospitals are being delayed in the process of construction, due to difficulties in securing fixtures and supplies.

Subsequent inspections have shown us many defective situations not previously noted, which

are not included in this report. As the program progressed, our efficiency increased, and hospitals in general cooperated very well. The attitude of the Department from the beginning has been one of persuasive control rather than of legal coercion and the aim has been to give advice and assistance in the correction of defects and thus enable hospitals to become eligible for licensure, rather than to close hospitals which do not meet the requirements. In a few instances procrastination and defiance have had to be met with a firm stand, but in only one instance has it been necessary to resort to the courts. Renewal of licenses the second year was based upon evidence of cooperation and a demonstration of an effort being made to remove defects. At no time have more than five per cent of the hospitals had their licenses withheld because of persistent defects.

After the initial survey it was noted that much could be accomplished by improvement of nursing techniques. Consequently consultant maternity nurses were added to the field staff. They were assigned to visiting maternity divisions in hospitals, acting as consultants and not as inspectors. By actually observing the nurses at work they are able to recommend changes in techniques that are time-saving and that provide greater safety to mothers and babies. On invitation they lecture to nurses' groups. Particular attention is given to the premature infant. Shortly after January of this year an outline of desirable nursing procedures was published and distributed to nurses on request. One thousand seven hundred eighty-eight copies of this manual have already been placed in the hands of nurses.

The past two years have seen quite a change in the hospital picture in Illinois. As in other states, there has been a decided trend toward hospitalization of all maternity patients. In 1935, 56.7 per cent of all births occurred in hospitals. For the year just closed (1941) the figure has risen to an all-time high of 80.5 per cent. The next slide shows how this trend has been related to the total number of births in the state as a whole and in the downstate area as compared with Chicago.

HOSPITAL AND HOME BIRTHS

		State		Downstate		Chicago	
Year	Total Births	Hosp.	Home	Hosp.	Home	Hosp.	Home
1935	111,884	56.7	43.3	41.9	58.1	75.3	24.7
1936	112,167	60.7	39.3	46.7	53.3	79.8	20.2
1937	115,282	65.5	34.5	51.3	48.7	84.1	15.9
1938	122,562	67.0	33.0	43.4	44.6	82.7	17.3
1939	117,841	69.5	30.5	58.6	41.4	84.8	15.2
1940	123,198	73.7	26.3	63.5	36.5	88.0	12.0
1941	134,451	80.5	19.5				

Crowding in hospitals was particularly noticeable in 1940. One result has been the stimulation of building programs — additions to old hospitals and the building of new ones. It soon became apparent that to save time and prevent mistakes in construction, approval of plans and specifications for hospitals would be necessary. Accordingly, it is now required that a copy of plans and specifications befiled at Springfield before construction begins. Consultation is supplied to hospital boards, superintendents and architects without charge. During the last two years ten new hospitals have been constructed and ten remodeling programs have been completed. Twenty-three building programs are now under construction, including four new hospital buildings. Five more programs are planned for the future.

I would like to emphasize that in spite of this building activity, hospital facilities for obstetrics in downstate Illinois are far from being adequate. Since 1935 the number of hospital deliveries in the area outside Chicago has more than doubled. There were 26,197 deliveries in 1935, and in 1941 there were 54,903. In the two-year period it from 1935 to 1941 there was an increase of 35.8 per cent. The problem is acute in some places, especially defense areas. That it will become more acute is shown by the fact that there were 24 per cent more hospital births in Illinois during January, February, and March of this year than in the same period last year. This latter increase is equally evident in Chicago and in the downstate area. The war tends to increase hospitalization, because of the scarcity of doctors and the increased ability of people to pay for hospital care. Careful consideration must be given to this situation by both hospital and governmental authorities. As is inevitably the case, the areas of greatest need both medically and economically have not participated to any appreciable extent in the recent building

MATERNITY HOSPITAL OPERATIONS

ABORTIONS—before the 20th week of pregnancy ..... Total _____
Number of operative interferences ..... _____
ECTOPIC PREGNANCIES—before 20th week ..... _____
after 20th week ..... _____
MOTHERS DELIVERED (exclusive of above) ..... Total _____
Without operative interference ..... _____
With operative interference ..... _____
(Should not include episiotomy)

CLASSIFICATION OF OPERATIVE INTERFERENCE

Induction
Rupture of membranes _____
Bag or other foreign body _____
Cutting or stretching cervix _____
Forceps deliveries
High _____
Mid _____
Low _____
Cesarean Sections
Low cervical _____
Classical _____
Porro _____
Portes _____
Vaginal _____
Breech presentations
Spontaneous _____
With interference _____
Version and Extractions
With indications _____
Potter Elective _____
Embryotomy (Craniotomy) _____
Infections (other than puerperal sepsis) _____
Morbidity* _____
Puerperal septicemia** _____
Toxemias
With convulsions _____
Without convulsions _____
Hemorrhages
Antepartum _____
Intrapartum _____
Give causes for the above two _____
Postpartum (within 24 hrs.) _____
Puerperal (after 1st 24 hrs.) _____
Hypertension _____
Hyperemesis _____
Contagious diseases _____
specify _____
No. Blood Transfusions _____

*A temperature of 100.4 degrees Fahrenheit (38 degrees Centigrade) occuring on any two of the first ten days postpartum, exclusive of the first twenty-four hours, is febrile morbidity. The temperature to be taken by mouth by a standard technic at least four times daily.

**An infection arising from or localizing in the female genitalia in association with pregnancy, its termination or the puerperium, and producing the systemic symptoms and findings of sepsis.

programs. The counties of highest mortality rates correspond to those with the least number of hospital beds.

Again following the lead of our colleagues in Chicago, we revised the report form that is sent monthly to the Department from each hospital. In the revision, a section was devoted to the reporting of clinical procedures in obstetrics. We have reproduced this form on the following slide.

The first reports were received for the month of January, 1941. The Chicago hospitals were accustomed to using a similar form, so no confusion was encountered there, but outside Chicago it took some time to accustom personnel to its use. We now have the first year's results to report. We realize that the first year is not entirely accurate, but the second will be better and several years will be needed before many conclusions can be reached. Nevertheless, we present these figures to show what information can be obtained and the wealth of information that is being tabulated on a state-wide basis. We are not aware of this information being available to this extent, in any other state.

The next slide shows some of the significant data obtained for 1941. The particular advantage of these statistics is the averages that they represent. The often-heard argument in respect to clinical statistics is that they are gathered by a specialized group under ideal circumstances, and cannot apply to the average hospital. That charge cannot be made concerning these rates. They are gleaned from clinical obstetrics in hospitals of all sizes and descriptions, and represent a great variance in ability and training of the attending physicians. Hence we can say that they are truly averages and can be used as a guide to measure the standard of work in individual hospitals. Yearly figures are being prepared for each hospital, in order that the staff may see how that hospital compares with state averages. It is to be noted that there are now more hospital deliveries in downstate Illinois than in Chicago. In 1940 the downstate area surged ahead, and it has since maintained that lead.

MATERNITY HOSPITAL ACTIVITIES

	Total		Downstate		Chicago	
	No.	%	No.	%	No.	%
MOTHERS DELIVERED	107,426	100.00	54,440	50.68	52,986	49.32
Without operative interference (Includes episiotomy)	78,685	73.22	40,474	74.34	38,211	72.11
With operative interference	28,735	26.80	13,942	25.68	14,793	27.92
INDUCTION: Rupture of membranes	3,105	2.89	1,584	2.91	1,521	2.87
Bag or other foreign body	269	.25	122	.22	147	.28
Cutting or stretching cervix	274	.25	139	.25	135	.25
FORCEPS DELIVERIES: Total	21,132	19.68	10,247	18.82	10,885	20.54
High	444	.40	390	.71	54	.10
Mid	2,199	2.04	1,321	2.43	878	1.66
Low	18,489	17.23	8,536	15.68	9,953	18.78
CAESARIAN SECTIONS	3,334	3.10	1,648	3.02	1,686	3.18
BREECH PRESENTATIONS	3,970	3.69	2,057	3.78	1,913	3.61
VERSIONS AND EXTRACTIONS	639	.59	376	.69	263	.49
TOXEMIAS (with convulsions)	321	.30	185	.34	136	.26
NO. OF BLOOD TRANSFUSIONS	1,895	1.77	632	1.16	1,263	2.38

ANALYSIS OF DEFECTS FOUND IN HOSPITALS

No. of Deliveries / No. of Hospitals in Each Division	1-25 25	26-50 20	51-100 30	101-150 24	151-350 58	351-1000 68	1000 15	Total 240
Physical examinations of personnel deficient	88%	85%	85%	80%	80%	90%	92%	85.71%
OB records lacking or incomplete	88	45	69	64	27	19.5	26	48.35
Craniotomy instruments not available	52	45	42	44	39	24	6.6	36.08
Visitors under 16 permitted	32	35	23	48	6.8	7.5	—	21.78
No incubator or heated bed	60	30	29.7	28	—	1.5	—	21.31
Infant clothing not furnished by hospital	56	55	19.8	8	1.7	—	—	20.07
Mother's temperature not taken four times daily	24	25	19.8	20	12	9	13	17.54
Pasteurized milk not used	32	35	13	28	3	1.5	—	16.07
Tracheal catheters not available	36	15	26	20	12	3	—	16.00
Atmospheric thermometers not present	8	5	13	12	20	28.5	19.8	15.78
Deliveries in operating room	28	35	13	8	3	—	—	12.42
Inadequate segregation	NR	NR	NR	NR	29	15	—	11.25
Unqualified OB supervisor	NR	NR	NR	NR	NR	19.5	46	8.33
Facilities for infusion and transfusion not readily available	16	5	9.9	4	15	10.5	—	8.63
Identification of infants inadequate	36	15	—	4	1.7	—	—	8.10
Sphygmomanometer not supplied	20	15	9.9	4	1.7	1.5	—	7.45
Infected cases in clean OB division	4	—	3.3	—	6.8	18	19.8	7.41
No nursery	24	20	3.3	—	—	—	—	6.75
Separation of cribs inadequate	8	5	6.6	4	3	4.5	13	6.30
Window area deficient	12	10	6.6	4	1.7	7.5	—	5.97
Oxygen not available	12	25	3.3	—	—	—	—	5.75
Baby's temperature not taken twice daily	12	5	13	—	—	3	6.6	5.65
Delivery table not provided	8	10	3.3	12	3	—	—	5.18
Laboratory facilities lacking	16	5	6.6	4	—	—	—	4.51
No separate OB nursing personnel	NR	NR	NR	NR	13.6	3	—	4.13
R.N. not on duty at all times	16	—	3.3	4	5	—	—	4.04
Infant formulae not prepared by R.N.	8	—	3.3	4	1.7	3	6.6	3.80
Visitors in contact with infants	12	—	3.3	8	—	—	—	3.33
Sterile uterine pack not available	12	5	3.3	—	—	—	—	2.90
OB beds not designated	8	5	6.6	—	—	—	—	2.80
Attendants with respiratory diseases permitted	—	5	3.3	4	—	—	—	1.75
Student nurses not under supervision	—	—	—	—	—	4.5	6.6	1.42
Unwashable walls	4	5	—	—	—	—	—	1.30
Labor room lacking	NR	NR	NR	NR	NR	4.5	—	1.27
Infant mattresses not covered	4	—	3.3	—	—	—	—	1.04
Patients under analgesia unattended	—	5	—	—	—	—	—	.42

NR — Not Required.

An examination of the rates for hospitals with various volumes of obstetrical work is more revealing than the comparison of gross figures for Chicago and downstate areas. For the group of hospitals having over 1,000 deliveries per year, there now being 19 of such hospitals in Chicago and nine in the downstate areas, the figures compare fairly well. This is likewise true in the group having 351 to 1,000 births. When we come to the group with 151 to 350 deliveries (there are 13 of such hospitals in Chicago and 41 downstate) there are very notable differences in some categories. In the Chicago group, 80.8 per cent of deliveries were non-operative, while the downstate group had 75.1 per cent. Infant mortality was 11.8 per thousand deliveries in the Chicago hospitals, as compared with 22.7 per thousand downstate. Maternal mortality was 1.3 per thousand in the former, and 3.0 per thousand in the latter. Stillbirths were essentially the same, 24.3 per thousand as compared with 24.8 per thousand. Caesarian sections occurred in 2.1 per cent of cases in Chicago and 3.1 per cent downstate. Postpartum hemorrhages were one-third greater downstate, and toxemias with convulsions were twice as frequent in the downstate area as compared with Chicago. In this latter category the downstate figures were higher in all divisions, except in hospitals with over 1,000 deliveries. This figure was greater because it included Cook County Hospital, where most neglected cases are received. As stated previously, we feel that these figures indicate only trends and a rough view of the situation, particularly in the downstate areas, because the filing of these reports is still a relatively new task for hospital personnel. Also, the lack of very many organized staffs still is responsible for the generally poor obstetric records.

The Illinois maternity hospital program has come a long way in the short period of its existence. Obviously, in a well-rounded program the first step is concerned with the matter of physical facilities. In this connection much has been accomplished. The elimination of sanitary defects alone is a major accomplishment. At the same time there has been inaugurated a service directed toward improving the efficiency of the nursing personnel. While much remains to be done, the important ground-work has been laid, which will permit consultation and service to all hospitals in the state. The ultimate goal of a good maternity program is good hospital facilities, good nursing personnel, and well-organized hospital staffs working in close harmony with the hospital authorities. We are glad to note that the impetus of this program has stimulated the formation of many staff organizations in hospitals not previously organized. This brings about closer attention to morbidities and mortalities and opportunities for consultation service and advancement in research. We hope that the day is not too far distant when all hospitals will have organized staffs, working together for the promotion of scientific knowledge and concurrently for the benefit of the patient.

I would like to point out that the findings reported in our survey were those found on initial inspections. Our subsequent inspections have shown considerable improvement, and a comparison with the original findings would bring out this improvement. We were not prepared to make this comparison at this time. Most of the original defects have been eliminated.

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PSYCHOTHERAPEUTIC ASPECTS OF STATE HOSPITAL PSYCHIATRY

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As the enthusiasm for shock therapy wanes, the psychiatrist is in a better position to re-evaluate his therapeutic methods and research emphasis. The writer believes that psychotherapy of the psychotic individual, both in its intensive form of psychoanalysis and its less intensive forms having more limited goals, is more and more proving its worth. However, it has yet to come into its own as a formal and emphasized part of the state hospital treatment program.

Psychotherapeutic methods have the advantage over other healing methods in that they are at once a way of research into the etiology of the functional psychoses, as well as a curative means.

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Just so, psychoanalysis of the neurotic individual was the research agent of Freud and others in the study of the etiology of neurosis. Just as the psychoanalysts, the child psychiatrists and others are expanding knowledge of the etiology of neurosis by treating and studying the parents as well as the patients, so the state institutions may also be in the position to study etiology further by the study of the parents of the psychotic. With the opening of the Community Clinics in Illinois, and of similar clinics elsewhere, and with the establishment of family placement programs, the parents of the patient will be treated and studied more and more. It is true that parents were regularly seen by state hospital doctors before, but because of the emphasis of the institution and the pressure of work, the relationships perforce, had to be very limited. But the Community Clinics will need to spend more time with the parents, helping them to resolve their ambivalences about taking or keeping in the home the improved or recovering patients. They will strive to bring about changes in the basic attitudes of the parents toward the pre-psychotic or psychotic patient which will benefit him. The day may come when collaborative therapy by psychiatrists such as was recently reported by Szurek, Johnson, and Falstein,[1] for therapy of parents and children, can also be done in the Community Clinics with parents and patients. Such therapy will yield much material on the interpersonal attitudes between the patient and the members of his family.

I stress the research side of such psychotherapy because it has become increasingly obvious that the environment of the psychotic must be studied in order to expand our knowledge about the etiology of the functional psychoses. The students of constitution are at a loss as to what is cause and what effect, and as to how changes take place. Statistics do not tell us how certain disturbances are communicated. The writer was forceably impressed at recent excellent symposia given at the Illinois Neuro-psychiatric Institute that the fields related to psychiatry — endocrinology, neuropathology, and biochemistry, by their own admission, do not have the means whereby the problems of etiology may be studied. If hereditary and congenital factors are so inaccessible, the psychotherapist can get at the environmental influences through his therapy of the patient and his family.

The cases of psychotherapeutic interest which will be given here are, except for one example, brief efforts. The goals were always limited. They are given as examples of everyday possibilities in the state hospital and the outpatient clinic.

While employed in an institution, the writer had occasion to admit a 19-year-old boy, later diagnosed as paranoid, schizophrenia. As soon as the patient passed the locked doors, he became acutely resistive. The father who brought his son, took the doctor aside and told him that he had brought the patient to the hospital by saying he was taking him on a visit. The boy refused to co-operate, saying that he would not stay if his father left the building. The therapist asked the patient if he would not accompany him. The youth suddenly lunged with his fist at the psychiatrist's abdomen. The doctor started and put his arms down to cover up. At this time the boy stopped short of delivering the blow and laughed maliciously. Asking everyone to leave, the therapist sat down beside the boy and spoke to him. The substance of the doctor's remarks went something like this: The patient was told that the psychiatrist could understand that he might be very angry with the father for having brought him to the institution by a hoax. The therapist went on to say he could understand the patient's feeling that it might be well to distrust everyone. Other people felt that way at times. If one became very resentful at such times, one might even want to strike another, as he had wished to hit the doctor. At this point the very surly look on the patient's face disappeared and he hung his head. The patient was then led away and no further trouble developed that day, although he often manifested irritable periods after.

By putting himself in the patient's place, the doctor understood that while the boy had seen through the father's story about the trip, his dependence on his father forbade his refusal to accompany him. He also saw that the boy's

1. Szurek, Stanislaus, Johnson, Adelaide, and Falstein, Eugene: Collaborative Psychiatric Therapy of Parent-Child Problems. **Amer. Jour. Orthopsychiatry 12**:511-516 (1942).

hostility, which was already great, although incapable of direct expression was markedly enhanced by the fact that the father lied to him and by the feelings of helpless impotence over being unable to resist the hoax. The patient felt that the therapist accepted some of his attitudes and acts, if even for a moment, and was able to feel more directly some of the hostility to which the doctor referred. When this brought some relief, the patient was able to co-operate. The persistence of some guilt over his attempt to strike the doctor, which probably was not entirely dealt with by the therapist, may, of course, also have played a role in the disappearance of the patient's hostility and rebelliousness.

Cases like the following will probably come to the Community Clinics: A woman of 43 had been diagnosed paranoid schizophrenia for five years. She had gone to institutions three times and received two courses of metrazol. Between visits to hospitals she was quite withdrawn and hallucinated. In the last year, whenever the patient became disturbed and unco-operative and showed her hostilities and delusions, she was given shock therapy at home. This had succeeded in dispelling the acute disturbance. Several such periods were thus managed. The therapist was called upon to repeat the shock therapy on such an occasion. Immediately after the convulsion, and while the patient was disorientated, she gave vent to many erotic fantasies. As she recovered her orientation she warmly clutched the doctor's arm and spoke affectionately to him. Shortly thereafter she was again quite withdrawn. The mother of the patient, the only parent living, became quite disturbed about continuing this treatment. She finally decided to discontinue metrazol. The mother desired some other treatment and psychotherapy was eventually suggested on the basis that it might prevent the recurrence of the acute disturbance and even help the patient's general condition to some extent. It was made clear to the mother that cure could not be expected. The patient was seen twice a week for eighteen months. Whereas the woman had been acutely disturbed four or five times each of the previous two years, after psychotherapy began she never manifested such episodes.

The patient's productions during the therapy were most interesting. For months she spoke (but only when encouraged to do so) with extreme repugnance, of fantasies, of fellatio, which haunted her despite every effort to escape them. When these compulsive thoughts and the hostilities which lay back of them were accepted, many guilt feelings and many ideas of self-depreciation were elicited. Eventually, she spoke indirectly and then directly of her great jealousy of her married sister, and then of her hostility to her mother who demanded unflinching dependence. While the patient was able to admit the validity of interpretations, she was rarely able to feel, really, any of the impulses and emotions which were involved in her comments. The interpretations were chiefly to reveal to the patient the feelings which she was *directing to the therapist* and which she revealed only by her fragmentary stories about the actions of other persons, her responses to these persons, etc. In the process it was of course possible to speak to the patient of emotional reactions which were also directed to others. The psychosis continued unabated except that at the end of the first year the hallucinations seemed to have stopped for awhile.

It became obvious that the mother had instituted psychotherapy not only because of her guilt with regard to her daughter's problems, but because she had hoped that the patient would be brought to accept complete dependence upon her. Since this did not occur, the mother felt free to project the responsibility for the independence and hostility of the patient on the doctor. By angrily blaming him for the patient's recalcitrance, in frequent telephone calls during which the doctor calmly listened to her without hostility, she obtained some relief from her own hostile tensions. At the end of a year and a half, when the doctor became a little annoyed with the mother, this parent became unusually insistent, and the patient was able to indicate that she could not bear her mother's demands and wished to be placed elsewhere. The patient and the doctor would have preferred the home of a relative but only a state hospital, which the mother reluctantly accepted, was available. At about this time the patient developed a well-established surgical condition from which she died in a general hospital.

While it is impossible to go into the detailed facts and speculations with regard to this case, here, we can see that the limited goal of preventing acute disturbance which had necessitated either institutionalization or shock therapy, was achieved until the end. The therapist felt that the last placement was of a different sort, incidental to the improvement of the patient. In the Community Clinics it will be discovered that as psychotic or prepsychotic patients improve and become more independent, placement outside of a home may have to be utilized to relieve the parents at this point and help the patient further. Sometimes, although the psychotic patient is making an adjustment at home, it is necessary to remove him to prevent another member of the family from breaking down.

Because of the extremes of attitude in the mother, and the intense preoccupations of the patient, certain factors such as great demands of the mother for the patient's dependence on her, the dependent needs of the patient, her hostilities and her jealousies seemed rather clear to the therapist and supplied much food for thought. The role of the therapist in this case was probably to give both patient and mother some relief from their mutual hostilities in this situation of tense, hostile dependence. By becoming somewhat dependent on the doctor, the patient could gain some independence from her mother and no longer needed to express her resistiveness in acute disturbance when the mother became more insistent or the tensions mounted.

A boy of 18 was brought into the hospital in a state of extreme schizophrenic excitement. The picture was typical, accompanied by hyperthermia, etc. The fright was extreme, and the patient spoke of people who were after him in the room. Reading the history revealed that the patient had recently been masturbating frequently, to the acute distress of his parents. One week before the acute excitement developed the patient had been circumcized because of the masturbation, which the parents had told the patient would make him ill. Considering the possible connection of the circumcision to the extreme excitement, the doctor spoke of this matter to the boy. At this time the patient, whose eyes were glazed, was being held in bed by several attendants, because of his violence. The boy had been hallucinating aloud and it had been impossible to establish contact with him. The doctor wondered if the youth had not felt that the circumcision indicated that his parents would not tolerate any of his sexual feelings. The therapist also questioned whether the boy did not feel that this doctor and the doctor who had circumcised him were going to do something very terrible to him because of his masturbation. The effect on the boy was immediate. He stopped talking and some look of recognition came into his face and eyes for the first time in days. This change lasted a few moments. Then the excitement was resumed, although somewhat abated.

Since then the writer has speculated on the possible use of intensive psychotherapy, even in such cases. Even though these patients are greatly excited, it may be that they are accessible. While it is not often that the connection between the acute excitement and some immediately antecedent events is so easily discoverable as it seemed in this case, it is likely that clues to the emotional turmoil of the patient can be gained from his productions. Perhaps it can be taken as axiomatic that underneath the great excitement and intense anxiety, there is always an intense hostility and guilt bursting for expression but only producing marked conflict.

While institutional psychiatrists have learned that the patient can be sustained physically during extreme excitement by maintaining the salts and nutriments via the parenteral routes, they have no method of attack on the duration of the excited period except for shock therapy. But in some of these cases there is great risk connected with the use of shock. It might be interesting for a skilled therapist to attempt intensive psychotherapy in such cases while the patient is being sustained physically. Cases of chronically disturbed schizophrenia might well deserve such psychotherapy also, before lobotomy.

I wish to emphasize that it is necessary to deal with the psychotic individual as if he were primarily a human being and not an organism manifesting bizarre feelings and thinking, before

it is possible to do psychotherapy with these individuals. This involved the capacity for identifying with the patient. Such identification will occur if the therapist is not too threatened by what he senses to be the underlying feelings of the patient. The situations which have produced some immediate change in the psychotic's behavior, particularly those which have resulted in hostile outbursts or disturbances, are discoverable, if the doctor's own problems are not so stirred by these same situations, that he is blinded to them. These antecedent events may be learned from clues which the patient gives himself or from reports of persons living with the patient, whether they be parents or hospital employees. It may even be that the insecurities of the psychiatrist drive him to deny the role of all interpersonal relationships as causal forces in the production and change of the psychotic disturbance. Although he is thus left with little to proceed on except vagaries about etiology involving theories of heredity and preformation-like hypotheses, he is also relieved of the responsibility of studying the patient's environment, the associated behavior, and the possibilities of modifying either environment or patient.

Over-identification, too, may occur and interfere with therapy. Because of his own problems the therapist may, by over-identification, encourage the patient to become more dependent or more rebellious in his behavior and feelings without giving him relief.

As an illustration of how the problems of the therapist may interfere with the analysis and treatment in a particular situation, I should like to cite the case reported by Dr. Maxwell Gitelson.[1] The patient was a woman who was employed as a menial among professionals. She had been trained in this very profession but had given it up so that her husband might achieve in the same field. Dr. Gitelson sensed that intense envy and associated hostility had been generated by this situation toward the other professionals and the husband. A therapist who himself was suffering from frustrated but great ambitions and who dealt with this unhappy situation by developing the conviction that he was quite satisfied with his lot, might have passed over this woman's envy and the blow to her self-esteem simply because the picture she presented was schizophrenia.

No discussion of psychotherapy in the state institution would be complete without mention of the therapist's role with employees. This becomes extremely important where, as is true in our state, the wages, satisfactions, freedom, and security of the attendants, the bulk of the employees, are such as to attract many insecure individuals. When the attendant comes to the psychiatrist with his irritations or anxieties about a situation or patient, if the therapist can give the employee some relief by accepting the person's hostility or anxiety with calmness and without retaliating, then the patients under the care of that employee will gain greater tolerance and freedom of expression at the hands of that attendant. If a superior medical officer is secure enough, by reason of his training and personality, to be consistently firm, when necessary, without making the insecure employees feel that they are unappreciated or disliked or that their hostility is being responded to in kind, that experience can be psychotherapeutic despite the fact that discipline or training is taking place. In the same way, a secure foster parent is able to make training situations a therapeutic process for the insecure child who has previously, in similar situations, experienced hostile, retaliatory attitudes at the hands of the parent.

Group psychotherapy has been utilized in Illinois state hospitals. There *are* methods for giving the members of a group as well as the isolated individual the feeling that their hostilities and anxieties can be accepted calmly and tolerantly by the therapist. However, the measure of acceptance which can be gained by an individual in a group is usually reduced by the rivalries and unfavorable self-comparisons which are felt in this same group. But the intense jealously which may be stirred, is only one of the special problems in this work. Some of the disadvantages of this approach may be partially offset by some measure of public acceptance and social recognition which can exist for some of the patients in these situations. Especially because of the economy of time attending this approach, the research of Schilder and others in this field, including Low and Klapman in this state, might well be expanded.

1. Gitelson, Maxwell: The Critical Moment in Psychotherapy. Arch. of Neurology and Psychiatry. 48:1012 (1942).

I believe that our state hospital doctors can engage in more psychotherapy, especially in that type having more limited goals. As a means of dealing with newly-developed, disturbed behavior, in cases of refusal to eat, etc., in the psychotic, psychotherapy may be an excellent substitute for tub, pack or shock treatment. Certainly, in the case of the patient who has become acutely disturbed, for the doctor to verbalize for this patient, his hostilities and annoyance and the implications of his destructive acts and for the physician to accept them in the therapeutic relationship, may not only bring some changes in the patient at the moment, but may also be valuable so far as future therapeutic possibilities are concerned. As the therapist gains some success, he will be more secure in his effort. More difficult psychotherapy may be carried out under the supervision of analytically-trained psychiatrists. The psychiatrist with more advanced training might attempt to treat acute and chronic excitements more intensively with the limited goal of terminating the excitement. In the Community Clinic the psychiatrist will now treat pre-psychotic individuals. The more labile situation and the greater possibilities in these individuals are likely to encourage the therapist in other therapy situations. The interpersonal relationships and processes are likely to stand out more definitely in the non-stratified, unconsolidated situations involving the pre-psychotic patient and his family.

Psychotherapy, like all therapy, springs from the interest of the doctor in the patient, but is made possible by the therapist's sense of security. It is not just a condescending or even friendly pat on the back as it was described by one individual to whom this paper was mentioned. No matter how brief its duration, it consists in a real and new emotional relationship in which some discharge of the patient's affect occurs with its attendant relief or gratification followed by some increase in the patient's relaxation, security and independence. Before it is possible for the patient to bring forward many unacceptable feelings, the therapist must be secure enough to calmly point out the unacceptable reactions of the patient to himself. In the therapeutic situation, these reactions are indicated in all the volunteered stories which the patient tells of her responses to others, and theirs to her, or in anything which spontaneously occurs, since the patient is always reacting to the therapist. Only by understanding all the spontaneous comments of the patient as having reference to the therapist does the doctor understand his therapeutic process. Only as the patient gives expression to the immediate feelings which press forward in relation to the therapist is he really able to gain greater freedom of emotional expression and to achieve new emotional responses of a more secure sort. The writer feels this is true whether the therapy be as intensive as psychoanalysis or as brief as one interview. As this therapeutic process continues it can reduce the patient's frustrations (with its attendant hostility and unhappiness), distrusts, and dependence, to bring general security. But the patient must experience a different emotional relationship than has existed for him before, in order for reconditioning or change of his feelings and attitudes to take place. This means that the therapist must really be a more tolerant, less frustrating, and less anxious and more consistent person than were the significant persons in the patient's past.

DISCUSSION

Charles W. Read, M. D. (Elgin): I have read and listened again to the essayist's enlightened discussion of this subject with much pleasure. I have been impressed with the fact that his discussion brings out three points in the method of examination.

The first might be termed listening with patience to the patient's remarks, no matter how meagre these may be; questioning the patient with carefulness, with technical precision if that is possible and with suavity. So often we question the patient in a hurry and the patient is conscious of that hurry and is antagonized by it as we ourselves would be in a similar situation.

And taking it all, — whatever the patient may say, — with tolerance, tolerance implying understanding, implying that the therapist is not blinded (as the doctor has said) by his own failures in adjustment, by the effect of his own life experience.

The patient is always responding to the therapist. He has always the therapist is mind as he converses with him, as he is questioned, — a very important thing, and this thought can be carried further to the stuporous or excited patient, as the essayist has indicated. We never know, presuming the person is not in coma or stupor, what he may obtain from what is said about him, from what happens in the environment, or what is said to him. We so often forget these things in our hurry to get something done.

I would like to enlarge the essayist's exposition of the apparent relationship in the therapeutic situation. I wonder if in selected cases it might not be that two patients could be treated as a group, together rather than singly, at times, anyhow, for the resolution of their mutual hostilities. We use the term "hostility" very freely. I think that we perhaps overdo the matter. We get caught in the trap of our own symbolism when we use this word to express what is perhaps a resentment, something that doesn't go into any aggressive behavior such as is ordinarily connotated by "hostility."

In one small sentence the doctor has referred to the human being as something quite different from the human organism; there is a nuance of expression there that rather intrigues me, — so much so that I ask him how he would define "a human being".

The use of psychotherapy versus packs and electric shock is an important thing for us to consider. We have so little time to spend upon the individual patient. We want to get things done in a hurry, — so we say "Give them electric shock; let's see what happens." We haven't time to sit down and talk to this resentful, semi-stuporous person. We do get in to contact with them quite frequently by the use of sodium amytal, which is a very useful therapeutic adjunct at times; but when we put one of these resentful persons into a pack, I wonder just what happens aside from certain physiological responses. Never having been there, I don't know!

Then one more point. We have so few physicians, psychiatrists, to take care of so many newly-admitted patients and to discuss with them their difficulties, to listen to their complaints, even, that it is rather discouraging to talk about psychotherapy as Dr. Perkins has presented it. Yet it should be our goal to sit and listen with patience, to question with care and precision and a lack of self-induced animosity, and always to judge with understanding.

George Perkins, M. D. (Chicago): I want to thank Dr. Read both for this comment and for some suggestions which he made before I read this paper. In answer to the question as to what I meant by the term "human being" in this paper, I wish to say this: I meant an individual who has feelings such as our own and who reacts in situations as we do, except that there are some differences in *quantitative* extreme. If the psychotic is such a human being, he becomes a person whom we can understand and whose feelings are like ours, despite behavior and verbal responses which appear irrelevant and bizarre.

Hubby: "Afraid I have some very bad news for you dear. We lost our cook today."

Wife: "Why, how in the world did you find out?"

Hubby: "I hired her at the factory."

A girl is sometimes like the ocean — she may look green, but she can get awfully rough.

DIAPHRAGMATIC HERNIA: ITS INCIDENCE AND TREATMENT

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SPRINGFIELD

This paper is presented with two thoughts in mind — to stress the relative frequency of diaphragmatic hernia and to illustrate its conservative and radical treatment by presenting the management of two cases.

It has not been very many years since diaphragmatic hernia was classed as a rare affliction. The increasing frequency of its "occurrence" may be considered a tribute only to the mounting skill of the roentgenologist, since its diagnosis in any other way short of exploratory laparotomy is largely pure inspiration. Harrington[1] reported that the diagnosis of diaphragmatic hernia at the Mayo Clinic had been twenty times more common in the past fourteen years than it had in the previous eighteen. Other observers[2,3] have reported a similar phenomenon. Undoubtedly the stress laid upon the routine search for such herniae in recent years by the roentgenologist has been the means of bringing this about. The patient is almost always referred with a tentative diagnosis that does not even suggest diaphragmatic pathology.

There are undoubtedly many asymptomatic herniae, especially in the aged,[4] but a review of those papers in which the total number of routine gastrointestinal examinations are quoted reveals a surprising incidence of herniae occurring in patients presumably referred because of clinical symptoms. (Table I.)

It is probable, that under conditions of general practise, symptoms sufficient to bring patients to the roentgenologist for gastrointestinal examination will lead to the discovery of diaphragmatic hernia in roughly 2 out of 100 patients.

Classification. — A diaphragmatic hernia may be defined as the presence of abdominal viscera in the thoracic cavity and passing through abnormal openings in the diaphragm. Such openings may be caused by congenital structural deficiencies in the diaphragm, and occasionally

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the esophagus, or they may be caused by traumatic rupture or inflammatory necrosis of the normal diaphragm.

In its embryonic evolution,[1],[18] the diaphragm, and structures both above and below it, are formed by and pass through such a confusing and complicated course that possible defects of development can easily be visualized. Much of the diaphragm has its origin in cervical myotomes, which implies a not inconsiderable descent to its final position. When the ultimate fusion of elements derived from at least three embryologic structures are co-ordinated and timed with the descent and rotation of the stomach and colon, it is not difficult to understand the occurrence of diaphragmatic hernia. It becomes more difficult to understand why there are not more such herniae!

Table 1.

The incidence of diaphragmatic hernia occurring in consecutive routine gastrointestinal roentgenological examinations as reported by various observers.

Author and date	Number examined	Number Hernia	Pct. of Hernia
Aime' and Solomon[5] - 1919	5,000	2	0.04
MacMillan[6] - 1920	15,000	3	0.02
Rendich[7] - 1924	5,033	2	0.04
Morrison[8] - 1925	3,500	42	1.2
Pancoast and Boles[9] - 1926	9,000	16	0.18
Elward and Otell[10] - 1929	400	6	1.5
Ritvo[11] - 1930	8,000	60	0.75
Knothe[12] - 1932		300	8.0
Rigler and Eneboe[13] - 1935	4,200	44	1.05
Root and Pritchett[14] - 1938	2,213	31	1.4
Eisen[2] - 1938	1,133	33	2.9
Levy and Duggan[3] - 1941	1,220	26	2.1
Beilin[25] — 1941	7,000	26	0.37
DeHollander[16] - 1941	1,070	15	1.4
Morris[17] - 1942	13,000	291	2.2

There have been many classifications, some quite detailed, applied to diaphragmatic herniae based upon etiology, embryology, the anatomical site of the opening in the diaphragm, the presence or absence of a sac, the abdominal contents involved, and the age of the patient. Clinically, such classifications create a distinction where there is no practical difference. Most writers state that there are three main groups: (1) Congenital; (2) acquired; and (3) traumatic. This classification is purely academic since there is every probability that so-called "acquired" herniae are the result of embryologic deficiencies, which are unable to withstand the stresses of intrathoracic and intra-abdominal pressure changes accompanying normal existence.

A classification of considerable practical value and one which aids in the selection of treatment is that proposed by Harrington.[1] He uses trauma as a criterion and classifies these lesions into non-traumatic and traumatic. The non-traumatic hernia may be congenital or acquired, meaning that it is either present at birth or develops later. If present at birth, the cause may rarely be an esophagus which is too short or an actual absence of one-half the diaphragm. The traumatic hernia may be caused by direct or indirect injury or by inflammatory necrosis of the normal diaphragm.

Congenital herniae are found at areas of embryonic fusion, most commonly at the foramen of Bochdalek and the esophageal hiatus.[19] Those herniae presumably acquired after birth occur quite predominantly through the esophageal hiatus, possibly because the structure of this ring allows easy dilatation[20] and the fluid-like mobility of the viscera immediately beneath it contributes to a ready prolapse. Add to this structural peculiarity, certain spasmodic or sustained increases in intra-abdominal pressure such as may accompany pertussis, convulsions, severe constipation or pregnancy, and we may have the developing force necessary to precipitate these herniae. Rigler and Eneboe[13] examined 195 women in the third trimester of pregnancy and found diaphragmatic hernia in 18.1 per cent of multipara and 5.1 per cent of primipara. Of ten positive cases re-examined following delivery, the herniae could not be again demonstrated in over two-thirds of the patients.

Traumatic diaphragmatic hernia may be caused by direct or indirect injury, such as those which result from automobile accidents and war wounds, or by inflammatory necrosis secondary to empyema and subphrenic abscess. Their most common location is in the posterior portion of the left diaphragm, but they may occur at any point. The esophageal hiatus type ordinarily is the only one boasting a true hernial sac and usually contains stomach alone. Other types of hernia have no sac and may contain a wide variety of abdominal viscera.

Symptoms. — The symptoms of diaphragmatic hernia are any or all symptoms exhibited by pathology occurring in the digestive, circulatory or respiratory systems.[21] This may sound like overstatement but becomes reasonable when it is realized that we are dealing with portions of the abdominal viscera in strained and abnormal positions interfering with the functions of the diaphragm, heart and lungs. Indeed,[22] if such interference did not occur there would be but few lesions of this sort that would produce symptoms.[23]

In the infant or child with a congenital hernia, symptoms may differ markedly from those in the adult.[24] Cyanosis is common and convulsions are frequent. There is often a cough simulating pertussis. The infant takes feedings poorly, regurgitates often, and, as a result, is undernourished and underdeveloped. Intestinal obstruction is quite common and asphyxia is the most common cause of death. Upon physical examination, other anomalies may be found; the lung is collapsed and dextrocardia is usually present. Roentgen examination reveals much of the gastrointestinal tract in the thoracic cavity with esophagus deflected and stomach inverted. In this type, operation is imperative but the mortality approaches 50 per cent in the best of hands.[25],[26]

When the defect is not such as to terminate life in infancy, the individual may lead a normal existence until a later period. As the hernia increases in size or, more important, as greater interference with function occurs, symptoms appear. These are protean, and it is said that these herniae are diagnosed erroneously on an average of three times before a correct diagnosis is obtained.[1] The diagnoses most commonly made relate to gall bladder and stomach pathology with a smaller group referring to the heart. Occasionally, obscure types of anemia are caused by such herniae. In a majority of cases of diaphragmatic hernia, however, the symptoms suggest pathology in some sphere of digestive function and it is aberrations of this type that bring the patient to the roentgenologist.

The first noticeable symptoms of these herniae as they are found in later life may be sudden and dramatic with acute intestinal obstruction or profuse gastric hemorrhage. But more frequently the onset is insidious, obscure, variable, and usually slowly progressive. Attacks of epigastric distress that may be projected through to the back, that often come on in the course of, or shortly after, a heavy meal, and are frequently relieved by induced vomiting or belching, or more simply, arising and walking about, may be the initial symptoms. So-called "intractable heartburn" appearing in the third trimester of pregnancy[27] has been a symptom frequently overlooked. A diagnosis of gall bladder pathology is customary at this point. The patient is seldom referred to the roentgenologist and responds fairly well to dietary and medical management.

Later, attacks may occur differing so in onset and symptomatology from previous illness that they are considered unrelated. The pain may be agonizing and vomiting difficult to induce. Pain may be referred to the precordium, left shoulder or left arm and be accompanied by tachycardia, palpitation, dyspnoea or cyanosis. The pain may be induced by only the ingestion of a fluid and food specificity seems absent. The attack may last for minutes or hours, may be completely relieved by vomiting and frequently recurrs immediately after food is taken. Oddly enough, these symptoms are often augmented when the patient lies down. Indeed, night awakenings with abdominal distress and bloody emesis may render sleep in the recumbent position impossible. Such a phenomenon, otherwise unexplained, should lead one to suspect diaphragmatic hernia.

Hemorrhage is common, either the emesis of bright red blood or the more chronic and persistent presence of blood in the stool. The clinical diagnosis at this stage may indicate coronary pathology, peptic ulcer, or secondary anemia, depending upon which set of symptoms is predominant.

There is often an interval of weeks or months between attacks and when these present a bewildering succession of symptoms marked by variable clinical pictures, the possibility of diaphragmatic hernia increases.

The roentgenologist must be able to distinguish clearly between diaphragmatic herniae amenable to surgery and other anomalies in which such procedures are not indicated. These are three in number. Eventration[28],[29] of the

diaphragm is not a hernia in the true sense of the word. The diaphragm is present but quite high and functionless either because of deficient musculature or phrenic nerve injury. Thoracic stomach,[30],[31] either complete or partial, implies that the esophagus is congenitally short and that, therefore, the stomach, in whole or in part, has never been below the diaphragm. Congenital absence of one-half the diaphragm[22],[32] is usually left sided, is often without incapacitating symptoms, and the lack of even rudimentary tissue makes surgical correction impossible.

Treatment. — The only cure for diaphragmatic hernia is the surgical closure of the defect. Conditions alter the picture so markedly, however, that one hesitates to become dogmatic in recommending treatment. In the infant, the spectre of intestinal obstruction and asphyxia is so real[33] that operation should be insisted upon, despite a relatively high mortality. In the obese and aged, much may be accomplished by careful attention to dietary details and medication.

The patient must be instructed to avoid all conditions which increase intra-abdominal pressure such as violent exertion, straining at stool, vomiting, and the ingestion of large amounts of food or fluids. Pregnancy should be avoided and the common habit of requiring a woman in labor to "bear down" might well be discontinued. Many patients who are poor surgical risks receive considerable relief by crushing the phrenic nerve on the side corresponding to the lesion.

In the operative treatment, the approach has often been discussed. Most surgeons favor the abdominal route, although necessary exceptions in the findings make a thoracic approach imperative at times.[33] In either event, because of possible absence of a true hernial sac, positive pressure intratracheal anesthesia is to be preferred. The incision should be ample since surgical procedures of this sort may be quite difficult. The left coronary ligament of the liver is divided and the left lobe retracted. The spleen is retracted laterally and adhesions occasionally make its removal imperative in order to provide adequate exposure or stop hemorrhage. The hernial contents must be returned to the abdomen without injury to the heart or aorta, both of which are obvious, to say the least. The necessary separation of adhesions may cause excessive hemorrhage from lung tissue. Pulmonary collapse may occur, and as Hedblom[21] put it: "Operation for diaphragmatic hernia, whether laparotomy or thoracotomy, usually involves the technical consideration and problems of surgical pneumothorax." A preliminary phrenicectomy (or mere crushing of the nerve) is advocated by many surgeons to permanently or temporarily paralyze the left diaphragm. This facilitates suturing, a difficult matter upon a moving diaphragm, and possibly prevents recurrence by relieving unnecessary motion during the period of healing. In the treatment of the congenitally short esophagus type of hernia, phrenicectomy is imperative.

Of the suture materials used it would seem advisable to employ either heavy braided silk or fascia lata to close the hernial opening. Catgut probably absorbs too quickly to be efficient. If a true sac is present, it may be excised or scarified. Many surgeons make no attempt to do this. Blood or plasma transfusion at operation or after is the method of choice to combat shock.

Postoperatively, efficient oxygen therapy is of considerable importance. In the event of artificial pneumothorax, oxygen therapy may prevent cyanosis until the lung has expanded spontaneously. In other instances, it may be necessary to aspirate air from the thoracic cavity by trocar and suction. Presumably, the sulfonamide group of drugs will prove exceedingly useful in preventing unpleasant complications.

It has been estimated that one-third of diaphragmatic herniae eventually strangulate.[21] In the light of subsequent reports, this estimate may be high. When it occurs, the treatment of obstruction or strangulation must of course become the predominant concern. Hedblom[33] has discussed many of the criteria for treatment.

Mortality and morbidity statistics naturally vary with the patient, the experience of the surgeon, and the presence or absence of strangulation. However, a survey of published case reports with an estimate of unpublished material, all philosophically interpreted, gives us a rough idea of what may be expected under reasonably good surgical conditions.

Recurrence is approximately 5 per cent. Operative mortality in the infant and child approaches 50 per cent. In the newborn, without operation, 75 per cent die before the end of the first month of life. In the older unobstructed cases, the operative mortality is probably around 10 per cent. Obstruction and strangulation at least double this figure.

CASE REPORTS

The two cases here reported do not constitute a long series, but they do illustrate many of the factors of treatment, both conservative and radical, which may be employed when such herniae cause clinical symptoms.

Case No. 1. Mr. F. S., born Feb. 1, 1917, a machinist. This patient was seen in his present illness Jan. 20, 1941. His complaint at that time was of a localized epigastric pain. This had started in approximately the first week in December, 1940. He had never had pain of this type before that he could recall. The patient localized the pain about 5 cm. to the left of the midline and 8 cm. above the umbilicus. It more commonly came on when the stomach was empty but not infrequently seemed to be exaggerated by food. A rather striking characteristic of the pain was its onset and frequent occurrence during the night. In fact, the patient's primary worry was his inability to sleep because of this pain. He has lost considerable weight for this reason.

Past History: This patient was seen for the first time on Jan. 18, 1936. He had a history of some sort of stomach trouble at that time which consisted of pain in the epigastrium brought on by ingestion of any sort of food, nothing selective noted, and relieved by vomiting. He had vomited after almost every meal for the previous two weeks. On Tuesday, Jan. 14, 1936, he first noticed yellow conjunctivae. This progressed to a very definite generalized jaundice. He was tired, weak, and very nervous. He had had mild diarrhea but the patient had never noticed gray or clay colored stools. This was considered to be a catarrhal jaundice and cleared up under medical management in approximately two weeks.

As a child of about 2 years, the patient had had very severe spasms which had always been blamed upon dietary indiscretion. Also as a child, he had scarlet fever, measles and chicken pox. With the exception of a circumcision done Aug. 23, 1939, the patient's previous history is not remarkable.

Of some interest is the family history. The mother had had two children uneventfully but after the second developed a complete uterine prolapse which two surgical attempts failed to correct. The nature of these attempts is unknown. The patient's sister had developed rather marked leg varicosities in her early teens. Whether these instances indicated a certain familial instability or weakness in certain tissue elements can only be surmised.

Figure 1. Hernia through the esophageal hiatus showing a portion of the stomach above the diaphragm. Case 1.

Physical Examination: Temp. 98.6 degrees. Pulse 78. Blood pressure 112/66. Wt. 190 lbs. With the exception of definite localized tenderness to the left of the midline and above the umbilicus, the physical examination is essentially negative. Blood Kahn and Wasserman negative on Feb. 20, 1941.

With a tentative diagnosis of peptic ulcer, the patient was referred for x-ray study (Dr. D. M. Sirca). This very clearly revealed a diaphragmatic hernia (Figure 1) apparently of the esophageal hiatus type. An attempt was made to secure some relief of symptoms through medical management so the patient was hospitalized on Jan. 24, 1941. He was placed essentially upon peptic ulcer management including sedatives and bismuth preparations, and received some relief. Upon being discharged on Feb. 7, 1941, he was having very little pain or discomfort. However, upon the attempt to resume ordinary activity, the pain returned with even greater severity and the patient requested surgery. This was done under cyclopropane anesthesia at St. John's Hospital on Feb. 20, 1941.

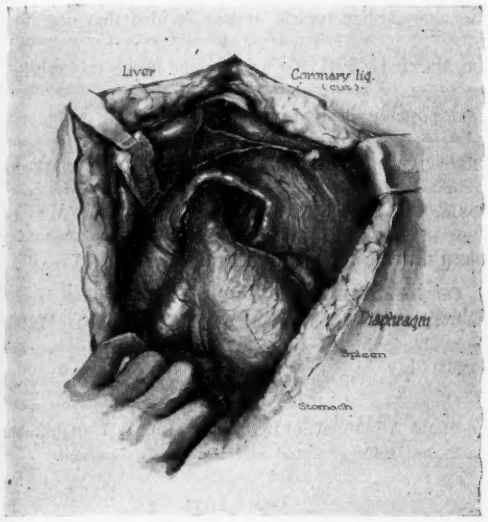

Figure 2. Operative findings in Case 1. A true sac was present and the dilated ring is well illustrated.

A long, slightly diagonal, upper left rectus incision was made. The coronary ligament was divided and the left lobe folded and retracted medially. Approximately one-third of the stomach was in the thoracic cavity, passing through a moderately enlarged hiatus. (Figure 2). A sac was present and artificial pneumothorax fortunately did not occur. The stomach was reduced and two mattress sutures of heavy black braided silk were employed to reduce the hiatus to normal size. (Figure 3a). In an attempt to prevent posterior rotation of the stomach and take some tension off the mattress sutures, the posterior wall of the stomach was sutured to the coronary ligament and its projection (Figure 3b) before the liver was sutured in place. The convalescence was uneventful. Oxygen was used at intervals for 48 hours and then discontinued. The patient was discharged March 16, 1941, completely relieved of symptoms. A roentgen study done April 14, 1941, revealed the stomach below the diaphragm. (Figure 4). Upon last examination on Jan. 22, 1942, no symptoms had recurred.

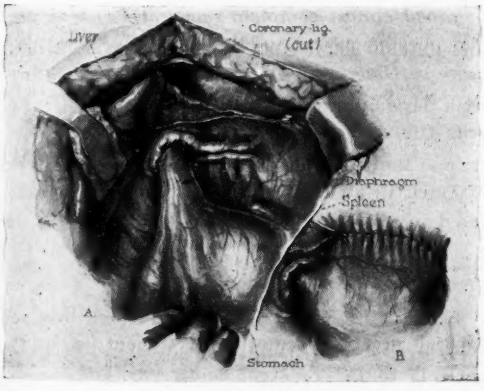

Figure 3. a) Case 1. Method of closure with heavy braided silk mattress sutures. b) Stomach sutured to the cut edge of the coronary ligament of the liver.

Figure 4. Case 1. The stomach remains below the diaphragm, 8 weeks postoperatively.

Case No. 2. Mrs. D. T., born Nov. 24, 1893. This patient, a white female of 251 lbs., was first seen at 5:00 A. M. Oct. 24, 1935, with a very severe epigastric pain radiating through to the right scapula and of several hours duration. This had been the fifth attack of such pain; first in May, 1932; second in February, 1935; third in May, 1935; and fourth in August, 1935. This was considered to be a typical gall bladder colic and morphine was administered freely. When seen several days later, the only abnormal finding was auricular extra-systoles.

Although the patient had had five acute exacerbations of pain, she also stated that since early adulthood she had been bothered with various types of epigastric discomfort or distress which were usually relieved by vomiting. She freqeuntly had attacks of "gas" which would keep her awake at nights and would be blamed upon dietary indiscretion.

Figure 5. Case 2. Esophageal hiatus hernia. This is not the short esophagus type since the esophagus may be traced to a point below the diaphragm.

She had had an appendectomy and some sort of ovarian operation in 1916 and in 1928 much fat had been removed from her abdomen by operation. By Feb. 18, 1939, her weight had varied from 246 lbs. to 262 lbs. At this time she was having some digestive difficulties and was urged to have a gall bladder and gastrointestinal study but did not do so.

Outside of mild constipation, rather vague digestive disturbances that were considered caused by gall bladder difficulties, and spasmodic attempts at weight reduction, the patient was in relatively good health until Nov. 14, 1940, when for two or three days she had hemorrhages of considerable amounts of bright red blood, apparently from the stomach. X-ray studies (Dr. William DeHollander) on Nov. 20, 1940, revealed a diaphragmatic hernia (Figure 5), apparently of the esophageal hiatus type. An additional finding was the presence of multiple diverticulae of the colon. Since this time the pain and discomfort had become steadily more severe and practically continuous. A striking feature of the pain was its nightly onset or, more definitely, its occurrence after the patient lay down. The ingestion of food either exaggerated the pain or relieved it to a certain extent. However, the patient had a definite sense of the bolus of food stopping at approximately the junction of the esophagus and stomach before passing into the stomach.

Considering the weight of the patient and a questionable cardiac muscle, it was decided that operative repair was a rather risky procedure. Consequently on March 11, 1941, the left phrenic nerve was crushed in order to paralyze the left half of the diaphragm and possibly in that manner, relieve the symptoms. Outside of a relatively slight wound infection, she recovered quite normally and has been very markedly relieved of most symptoms since. She still has occasional epigastric pain and discomfort, usually the result of an excessive food intake, but is now able to sleep through the night without difficulty.

On June 3, 1941, the patient brought up about one tablespoon of bright red blood accompanied by considerable pain for two or three days. This has not recurred.

Upon Feb. 4, 1942, fluoroscopic examination (Dr. William DeHollander) revealed the left diaphragm still markedly elevated and absolutely immobile.

COMMENT

These cases are quite typical of the ramifications and degree of symptomatology which may occur in the presence of diaphragmatic hernia. They are further typical in that the tentative diagnosis in both was peptic ulcer and it remained for the roentgenologist to arrive at a true diagnosis.

In Case 1, there is a possible hereditary defect in certain tissues plus spasms during infancy to explain the hernia. The age of the patient and his general condition made surgical repair the most feasible procedure, especially since conservative management brought but temporary relief.

Case 2 presented an older, markedly obese woman with a questionable myocardium. She obtained almost complete relief by crushing the left phrenic nerve and the result has remained quite satisfactory. Of some interest is the fact that the diaphragm is still paralyzed almost one year after the operation. The concomitant presence of multiple diverticulae of the colon is to be expected in about one-half of the cases encountered in adults.[31]

CONCLUSIONS

1. It is probable, that under conditions of general practise, symptoms sufficient to bring patients to the roentgenologist for gastrointestinal examination will lead to the discovery of diaphragmatic hernia in roughly 2 out of 100 patients.

2. The two cases presented illustrate the symptomatology which frequently occurs, and both the conservative and radical treatment of diaphragmatic hernia.

3. Symptoms resembling those caused by peptic ulcer or gall bladder pathology, often somewhat atypical, and often exaggerated upon assuming the recumbent position should be suspected of being caused by diaphragmatic herniae.

4. A prolonged history of slight dysphagia or "heart burn", unexplained anemias, or anomalous cardiac symptoms, frequently post-prandial and relieved by vomiting but not by food, should receive the benefit of a gastrointestinal roentgenological study.

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The sugar is D-Ribose. The waste is sulfite liquor. Just a small fraction of the liquor now poured into streams will supply the entire world with all of this sugar it needs for all now known purposes. The report was made to the American Chemical society by Dr. Jonas Kamlet of the Miles Laboratories, New York. — *The Journal of the Florida State Dental Society, October,* 1942.

THE VALUE OF MINIATURE CHEST FILMS

ARTHUR S. WEBB, M.D., F.A.C.P.
GLENN ELLYN

On discussing this topic I am only discussing the 4 x 5 inch single and 4 x 10 inch stereoscopic miniature film as used with the photoroentgenographic unit built by the General Electric Company. I am speaking only as a tuberculosis worker and not as a roentgenologist. This subject of low cost films for community survey work has been carefully and adequately covered to date by such authorities as Dr. Hollis Potter of Chicago, Drs. Bruce H. Douglas and Carl Birkelo of Detroit and others.

The value of such media in case finding for mass surveys is no longer questioned by those who are doing tuberculosis work.

The necessity of finding the hidden case of tuberculosis in control programs is obvious. The quest for a rapid and inexpensive method has ended as the film used, the 4 x 5 inch or 4 x 10 inch or 35 mm. or paper all have their adherents and values as diagnostic screens.

The roentgenologist is primarily interested in accurate diagnosis. The tuberculosis worker is interested in accuracy but he is also interested in cost as he is charged with the responsibility of tuberculosis control and low cost of investigation per patient is necessary if he is to reach many in such investigations.

The first attempts at any roentgenographic work with less than the standard 14 x 17 inch stereoscopic film were met with objections. It was said that the percentage of error between the standard type and the various other types used was too great. The work of Plunkett and others showed 3.4% of minimal cases of tuberculosis missed on the 4 x 5 inch film when compared to the 14 x 17 standard film. Again (later) Plunkett states that "The results of his study show that by using the 4 x 5 inch film 98.3% of all cases of clinically significant tuberculosis would have been found."[1] Potter, Douglas and Birkelo report "The 4 x 5 inch photorentgenograph quite accurate. Only 2.6% error in detecting 271 cases with active tuberculosis lesions as found in the full size film taken of 1,610 persons."[2]

When the tuberculosis control program was set up in DuPage County, Illinois, an investigation was made of various types of equipment and this led to the purchase of a conventional 200 M. A. equipment with tube stand and rail and a motor driven cassette changer at one end with the photoroentgenographic camera at the other. Thus the 4 x 5 inch miniature can be taken and if further investigation is necessary a 14 x 17 inch single or stereoscopic film can be made for further study.

This equipment is set up in an office in a central location in the county and patients either individuals or groups are brought to the equipment for case finding work.

The technique used for the 4 x 5 inch miniature is 200 M. A. at 40 inches distance and .2 to .3 seconds time with K.V.P. at 58 to 82. For the 14 x 17 inch films we use 200 M. A., 72 inch distance, time 1/20 second. The advantage as has already been pointed out by Plunkett that the 14 x 17 inch film has over the 4 x 5 inch is not only in size but in shorter time exposure.

We are using the x-ray as a means of diagnosis on suspects, checking family contacts periodically and all positive tuberculin reactors in school, industrial or other group surveys. We also used it on a limited group of selective service men (376).

In the beginning of our experience with the 4 x 5 inch film particularly in the first month, it was sometimes difficult to interpret the pulmonary markings and large films were requested in five percent of the cases. Later as experience in reading the miniatures was greater and more comparative films were taken, this percentage was reduced to two percent. After the stereoscopic attachment was added, the difficulties in interpretation were much less. This 4 x 10 inch film gives two 4 x 5 inch films with a shift of 4 inches between each one. Small shadows that might be obscured by a rib or other bone structure in one may be found in the other.

In this series of x-rays of over 4000 films 2,300 were of the single 4 x 5 inch, 1000 were 4 x 10 inch and 850 were 14 x 17 inch. The only

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retakes made were done when there was a question involving interpretation or when pathology was definitely noted, then large films were taken for study.

In the beginning the miniature was used only in survey work among contacts and positive tuberculin reactors. It was not used as a diagnostic media in cases referred for diagnosis by the family physician until we found that the physicians were referring cases that were not primarily chest problems but were referring cases for routine chest films as a case finding measure and as an elimination process in diagnosis or for periodic examinations. A brief history is taken on each case referred for x-ray. If the story is quite suggestive of pulmonary pathology, a large stereoscopic film is taken. If the history is not suggestive, a 4 x 10 inch stereoscopic miniature is done. This had to be done in the interest of economy as the number of referrals has been increasing monthly. There have been others who have taken parallel series of miniatures and 14 x 17 inch films for comparison. We have not run a parallel series except to take miniature 4 x 10 inch stereoscopic films on all cases that show minimal lesions on the large films. In each instance the minimal lesion noted in the large film was noted in the stereoscope in at least one of the pair of the 4 x 5 inch films and noted with enough detail to dictate further study of the case.

In conclusion as I have stated previously, this is not a report on a parallel series of comparative films. This is merely a personal opinion on the value of the 4 x 5 inch miniature x-ray film compared to the stereoscopic film taken as a 4 x 10 inch film. If, in the opinion of the authors quoted, 97.4%[2] and 98.3%[1] respectively of the cases they surveyed were found on the single 4 x 5 inch film and in our series of retakes on minimal lesions noted on the 14 x 17 inch film and checked again on the 4 x 10 inch film and found on at least one of the films of the pair, we can conclude that it is possible to find better than 98.3% or closer to 100% of even minimal cases. While this 4 x 10 inch film is twice as expensive (12 cents) as compared to the 4 x 5 inch film, its diagnostic possibilities are much greater and warrant the extra expense.

In the experience in our community where the doctors are referring more and more cases for investigation of the chest, this low cost highly accurate method is more than valuable. Any factor which encourages the family physician to look for tuberculosis is a definite step in the control and eradication of this disease. It should be emphasized that the interpretation of these miniature films requires some experience in comparative values. Also, that a definite diagnosis can be made in many instances directly on the miniature film but should be deferred until the case is studied with the conventional size film.

Even with the fine work done so far in this field we have not seen the peak of excellence yet reached in miniature x-ray work.

Dr. Hollis E. Potter has stated that "They have recently produced another film with a complex single emulsion which tests out even better in certain respects." He also states that "The grid diaphragm is an instrument of no small value in fluorography particularly when a focused parallel non-moving grid is used in connection with certain types of film emulsions which seem to need the diaphragm to prevent fog. As new and faster emulsions appear, it is probable that such grids will be used in routine."[3]

Dr. H. Kennon Dunham of Cincinnati has stated that "I vote for the new 4 x 10 inch stereoscopic film which I believe is going to revolutionize mass examinations. I don't think there is anything I have seen in the whole work of roentgenology which appeals to me more than the stereoscopic 4 x 10 inch film."[4]

These opinions in addition to the experience in our community with the miniature x-ray as a case finding medium will, I believe, in the future be the greatest step in the eventual control and eradication of tuberculosis.

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DISCUSSION

Dr. Darrell H. Trumpe, Springfield: I too, feel like Dr. Webb, that the use of the miniature x-ray of the chest is a great step towards control and eventual eradication of tuberculosis. It appears to be our best solution for this problem.

Since we are in complete agreement, it seems well to re-emphasize a few points. X-ray in chest work has gone through a gradual evolution. It has gone

from the lowest to the highest place in our list of procedures. At first the x-ray was considered too inaccurate to be of use. However with improvement in equipment and films, and the standardization of technique, it has become our greatest aid in uncovering chest pathology, especially tuberculosis.

Few, if any, medical tests excel our present day conventional (14 x 17) chest film in reliability.

It should be needless to repeat that roentgenologic examination can and often does reveal minimal pulmonary tuberculosis, when symptoms, physical signs, and other laboratory tests are indefinite or even entirely lacking. However there are still too many who will pronounce a chest "clear as a bell", without a good film of the chest.

We know that tuberculosis, in its active form does exist in apparently healthy individuals. Therefore tuberculosis control and eventual eradication depends upon examining apparently well people in mass x-ray surveys.

Recognition of the value of case finding surveys, has caused us to search for a method which is both accurate and inexpensive, as Dr. Webb has pointed out. At present the miniature film is our best solution. As to the optimum size there is much controversy and many dogmatic statements. Perhaps we will not know the best size until after the war. The Navy uses the 35 mm. and the Army uses the 4" x 5". I do know the armies 4 x 5 sterioscopic films that I have seen are most satisfactory. In Germany surveys or rather Tuberculosis Registration, 24 x 24 mm. films, that are projected 9.5 x 9.5 cm. are considered satisfactory. They have no difficulty in registering whole communities there.

The older method of conducting surveys by using the tuberculin test as a screen, and taking 14 x 17, films of positive reactors was fairly accurate but quite expensive. When one speaks in the terms of 1000 chest films the difference in film cost alone amounts to about the difference between $650 and $50 or $100 if sterioscopic photo-roentgenographs are used.

I do not wish to devaluate the tuberculin test, it is very useful to us in diagnostic work, but it does have its disadvantages in mass survey work. It is not entirely accurate, it increases the time and personnel required, and adds to the expense of the examination. To quote Douglas and Birkelo who have used the 4 x 5 films extensively in Detroit, they say — "Photoroentgenography can be applied directly without preliminary tuberculin testing with greater accuracy, and, at the same time, economically." Dr. Webb spoke of using the miniature film in positive tuberculin reactors. I would like for him to give us his opinion about replacing the tuberculin test as a screen, for segregating potential cases of tuberculosis.

I feel that the miniature film has great potentialities and no doubt its accuracy and application will be increased in time. The method can be used so rapidly and inexpensively, that it can be used repeatedly in the same group of individuals, for a serial study. It should be of great value in following arrested cases of tuberculosis, in cardiac clinics and anti-syphilitic clinics.

I have enjoyed Dr. Webb's discussion and it has been a pleasure to discuss this relatively new subject.

Dr. William DeHollander, Springfield: I have had no experience with the 4 x 5 film. I do think, however, knowing what I do, that the 35 mm. or the 4 x 5 would be as good or a better method than the tuberculin testing in that you have a permanent record to which you can always refer back. Whether it would replace it, I do not know. I think we are in the transposition period.

Dr. Arthur Webb, Glen Ellyn (closing): Dr. Trumpe commented on the possibility of using the miniature film in cardiac work. In heart work the value of the distance, 72 inches, and the short exposure time gives us less distortion of the heart outline than you get in the 4 x 5 miniature, which is taken in two-tenths to three-tenths second time at a distance of only 40 inches. Whether or not the cardiologist would feel that he would want to depend upon the miniature film in heart study, I do not know. I would be interested in seeing cardiologists play with the miniature film long enough to get some experience in judging the value of the miniature film, as it has taken others in judging film from the viewpoint of chest and lung pathology. It requires experience with the miniature film to interpret it and so it would in heart pathology. You can pick off gross cardiac pathology on miniature film just as easily as you can on the 14 x 17, but you could not view the standard measurement of the heart as it is done with the usual technic.

As far as skin tests are concerned, Dr. Tice and his co-workers in Chicago had an article in the Review of Tuberculosis, I believe it was in the December number, in which he discussed the relative costs of doing tuberculin testing and x-raying, or doing just the x-raying alone with the miniature film. They found that in doing the tuberculin testing as a preliminary procedure and then the x-raying, that the cost was prohibitive in comparison to doing the filming alone.

In our community, I do not believe that is so. We have a county of 103,000 people, and with the organization that we have, I feel that the cost would not be prohibitive. We still use the tuberculin test preliminary to doing the filming with the miniature film. We feel that the tuberculin test has a value from an educational standpoint. The individual who has a positive reaction on his arm is more anxious to have an x-ray than an individual who comes in for a film and who does not have that very positive personal evidence that he has at least been innoculated with the tuberculosis germ.

Of course, the subject of skin test in comparison to the miniature films would involve a discussion of the skin test which is not the purpose of this particular paper.

If we are going to compare the two methods of mass surveying, using the skin test and the x-ray, or just using the x-ray alone, it is of no value to take a miniature film of an individual this year and not repeat it next year. That should be done year after year on your survey group in order to get any value out of mass surveys. The same is true if you do tuberculin testing and find your positive group this year and film them; next year you should go back and retest the negative group and film the positives of that negative group the following year, or your survey is of no value to the community. That has been definitely proven in our community where we have gone back and re-rayed particularly high school boys and girls. We would find a girl who had a normal film last year, and this year the film showed evidence of early tuberculosis.

I thank you for the privilege of appearing before this Section.

CONSIDERATIONS ON ONE THOUSAND CHEST X-RAY EXAMINATIONS PERFORMED ON MEN APPLYING FOR EMPLOYMENT

A. A. BAUER, M. D.
CHICAGO

The chest examinations to be discussed were made on men seeking employment in industries where they were subjected to silicic dust. The examinations were instituted some years ago when numerous law suits were pending with men claiming indemnity by contracting the disease at work. The employees were then examined to determine the number affected and the involvement in the cases affected. Many of the men seeking employment came from similar plants, some of which had serious dust problems. In order to avoid the accumulation of more liability the men seeking employment were then obliged to have chest roentgenograms made.

With the roentgenograms many other conditions were detected which could have been easily overlooked on rapid superficial routine physical examinations in a noisy plant office. For instance the industries were not interested in pulmonary tuberculosis but the medical profession was and has to a large extent eliminated tuberculous workers from employment in hazardous industries. This probably is more important than silicosis in a sense when we consider the physical well being of men who have a moderate to far advanced silicosis and the fact that they are of no particular hazard to their fellow workers. Cardiovascular diseases, pleural scars, adhesions, glandular enlargements, malignant lesions, anomalous changes are also frequently demonstrated after a negative physical examination. Many conditions cannot be detected on physical examinations, others can be found on a more careful examination after studying the roentgen film.

The men chosen ranged in age from eighteen to forty-five. As stated before many men were exposed to dust in previous places of employment. Recently however many of the men were applying for industrial work for the first time. The young group came from school and the older group from the farming areas seeking employment between seasons. Most of the cases included in this number came from the more recent examinations in the past year, therefore the group should give a fair index of findings of a group of men who have no complaints referable to the chest.

To simplify the report, they included congenital deformities, abnormal changes shown in the thoracic cage, lungs, pleura, heart and aorta, diaphragm and the medistinum. They were then classified into seven types.

Type 1. Type one was considered a healthy chest. Calcified hilum glands, calcified primary foci, fibrous, interlobar and diaphragmatic pleural changes, healed rib fractures and resections, dense fibrous tuberculous scars, slight to moderate cardiac enlargement, slightly widened aortic arch and slight prominence of the aortic bulb were included in type one. The report of type one was summarized as negative to silicosis and negative for active disease but showing markings, scars, calcified areas the result of previous disease which are to be discounted as meaningless in cases with negative clinical and physical findings.

Type 2. Type two was summarized as showing probably silicosis of a minimal grade. The cases were classified as minimal if they presented increased dense enlarged hilum shadows and an increase in density and diameter of bronchovascular markings plus the minute discrete dense shadows (beading) two mm. or less in diameter

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scattered along the increased bronchovascular markings and occasionally the involved mid and lower lung fields are faintly clouded.

Type 3. Type three showed probably silicosis of a moderately advanced stage. This group included the men with nodulation up to four mm. in diameter with the hilar and bronchovascular changes increased as compared to the minimal stage.

Type 4. Type four were cases showing advanced grade of silicosis, cases with larger nodules measuring six mm. in diameter and less and conglomerate areas of nodulation, diffuse areas of clouding in the lung fields usually the mid portion, thickened pleura and increased fibrosis.

Type 5. Type five were cases with pulmonary tuberculosis.

a. Minimal

b. Moderately advanced stage

c. Far advanced stage.

Most of the cases in type five were moderately advanced.

Type 6. Type six were cases with probable tuberculosis combined with silicoses.

Type 7. Type seven were cases with special findings heart, lungs, mediastinum and thorax not included in the above classifications.

In order to get a more definite picture of the types of chests six hundred recent cases were taken. If we had included previous films the percentage of cases with silicosis would be much higher because most of the men had been employed in dust at some time or other. In this series some of the men had been exposed to dust but it is of more of an average group of workers who have worked at other occupations and many who have not been previously employed. The striking picture after examining a large number of chest is the high percentage of healthy chest that come through between the ages of eighteen and forty-five, also the anomalies occasionally encountered in type one. Many chests show the increased lower lobe bronchovascular markings. Many of the men with those markings were re-examined and were found to have no clinical or physical findings. Pleural scars and diaphragmatic adhesions were included in type one. Cardiac enlargement in moderation with no physical findings were included in type one, others were subject to another physical examination to rule out valvular diseases which may have been overlooked.

Silicosis, the cases were only included when they presented the increased hilum shadows and the beading. If there was doubt as to the classification they were placed in the next previous classification, that is type one instead of type two and so forth. If they presented considerable fibrosis but no definite beading they were placed in type eight and the examining physician was consulted to determine whether the man should be employed.

Tuberculosis, unless the findings were calcified primary nodes, calcified hilum glands, a few dense apical and upper lobe peripheral markings without clouding they were placed in type five. Occasionally a case with numerous discrete dense shadows two to five mm. in diameter scattered throughout both lung fields were discovered which were placed in type seven as healed miliary tuberculosis.

Silicosis and tuberculosis were not encountered in this group. In the previous group however occasional cases were found.

Type seven — under this group eight cases with cardiac involvement were found. The most common was left heart enlargement and concentric cardiac enlargement. Increased lower lobe markings with physical findings were classified as bronchitis and bronchiectasis. Diaphragmatic pleuritis with effusion, widened aortic arch, prominent aortic bulb, calcification of the aorta, extensive fibrosis without beading, coarctation of the aorta pneumothorax and dermoid cyst were also found.

To summarize this, the group of six hundred industrial chest examinations, which under the above classification resulted in the following:

Type 1. So called healthy chest 522 cases.
Type 2. Minimal grade silicosis 22 cases.
Type 3. Moderately advanced silicosis 1 case
Type 4. Far Advanced silicosis none
Type 5. Pulmonary tuberculosis
Minimal 5 cases
Moderately advanced 9 cases
Far advanced 1 case
Type 6. Tuberculosis and silicosis none
Type 7. 40 cases

Despite the apparent small amount and reverse nature of the pathology determined by this series of examinations it can readily be seen to

be of a high degree of merit in protecting the diseased patient, the examining doctor, the employer, and those who might otherwise be exposed to infection. Viewed from this standpoint routine examinations of all employees in any industry which may be associated with any industrial hazard becomes a highly desirable hygienic measure which I believe will be more strenuously educated. This can even be extended to non industrial groups, such as personal servants, especially those who handle children, food and dairy employees, students, nurses and any similar groups.

DISCUSSION

Dr. Harold Davis, Chicago: I am glad to discuss Dr. Bauer's paper because I think it is an important addition to our statistics, bearing out previous experiences as to the incidence of tuberculosis. His incidence of tuberculosis was two and one-half per cent out of 600 people examined which is about the same percentage, perhaps a little higher, than is found in different states and in various communities throughout the country. It presents a distinct advance in methods of eliminating foci of tubercular infection.

A number of years ago, Dr. Brittin of the Harvester Company pointed out at a meeting of the Industrial Section of this Society held here in Springfield that the incidence of tuberculosis in workers in industrial plants in the State of Illinois was considerably lower than in the population as a whole, which included all the farming communities. There is no question in my mind that this routine examination of all employees has been the screen which has selected and identified active cases of tuberculosis.

The question which I should like to ask Dr. Bauer is a question which I have not been able to answer satisfactorily. Why do some cases of silicosis show no evidence of advance? They may show a minimal amount or a moderate degree of silicosis at their first examination but show very little, if any, change when re-examined one, two, three, or four years later. It seems to bring up the point that certain individuals whom I like to class as healthy men in that occupation are able to expose themselves to the amounts of dust that we see in modern factory operations in the United States without developing silicosis. A distinction must be made between native South African underground workers and their limited diets and other variables and the class of people employed in surface operations in plants in the United States and our living conditions. However I believe it goes still farther and supports Dr. Barclay's experimental work at Oxford University a number of years ago in which he sprayed lead dust, finely ground to the size of the silica particle, which is supposed to produce silicosis, into the lungs of cats. He found they were able to climinate tremendous quantities, sufficient to plug the major bronchi. They were able to eliminate large amounts of lead dust in a relatively short period of time, a very few minutes to hours. When the air was saturated with moisture, the lead dust remained in the bronchioles for many days to weeks.

I think that this work can be interpreted as showing that a healthy lung, one which has no infection, either specific tuberculosis or non-specific infection secondary to an upper respiratory infection, or no passive congestion such as we see in low-grade cardiac lesions, a lung which has none of these minor unhealthy conditions, is able to tolerate rather large amounts of dust in our present modern environment.

Now, implying that a reasonable hygiene is employed in these plants, I think that Dr. Bauer's examinations show the necessity of eliminating men who have various degrees of disability or unhealthiness, you might say. They are, strictly speaking, not disabled because they are all able to work; they want to work, but they are not up to par; they are not up to a standard, and we must have a standard of healthy chest which we must expect of a man going to work in a dusty plant. With routine examinations in large numbers and their careful study, I am sure that we are going to add a great deal to our knowledge of silicosis and tuberculosis.

Dr. F. Flynn, Decatur: Dr. Bauer, I believe there is still another factor that should be taken up in examination of these chests. We speak of silicosis. Among these employees, are we looking for silicosis or are we looking for pneumoconiosis? There should be some distinction made.

Personally, I believe that all dust produces some change in the lungs if inhaled in sufficient quantities over a long enough period of time, whereas all the studies based primarily on the South African and the American studies are on silica dust. There is probably damage to the lung tissue due to a chemical change by disintegration of these dust particles within the tissues. It has been definitely proved that only particles of less than ten microns in diameter reach the alveolus of the lung, and above 90 per cent of those particles are less than five microns. Most of them are on micron down to colloid material.

As Dr. Davis pointed out, the lung has a marvelous defensive mechanism by which it screens out this dust, primarily in the nasal passages and the upper bronchi, the cilia are working always towards the exit, and are moving this dust out. Only a very small amount actually reaches the alveolus, and only those particles which are taken up by the so-called dust cells and taken into the lymphatic circulation produce damage.

In making surveys and studies, I think the one primary fault in all our work is that we know nothing about the physical conditions under which these men work. As far as I know, in the State of Illinois there has been no study made of the size and quantity of dust in the atmosphere which these men breathe, and unless there is a sufficient quantity of sufficient fineness, there can be no such thing as a pneumoconiosis

or silicosis; therefore, the basis of the primary study should be made on the physical characteristics of the dust in the working conditions.

Dr. Harry Olin, Chicago: I had the good fortune some years ago during the silicosis litigation to examine a group of about 25 working men, men whom I thought probably representative of a cross section of this big problem throughout the country. They were exposed between from a period of two years to thirty years, and very luckily for me, I was able to make x-ray studies on all of them, not flat plates, but I fluoroscoped every one of them and took the films not only stereoscopic, but in the obliques. What amazed me, I think, more than anything else, were those very extensive cases of long exposure.

I think one has to follow out. I think interpretation of a plate without some history of dust exposure or occupation of the individual is inadequate, insufficient. It is not fair to the roentgenologist. I think one should have a short history of the occupation of the individual, length of exposure, and the type of dust to which he has been exposed. I think in that way one can render a more intelligent interpretation and render to the employer a type of report which is fair to the man and also fair to the examination.

What surprised me more than anything else was the tremendous amount of dust deposit in the lungs and some of these individuals were very comfortable. In fact, they were all working; not one of them could be considered as being physically incapacitated. This was just a routine.

There is another factor, I think, which should enter the problem of dust inhalation or other diseases that simulate inhalation disease. I refer to one case that I was called out on that was diagnosed as silicosis, which proved to be an atypical form of miliary tuberculosis. It was not typical of miliary tuberculosis, and it was typical of silicosis, but it was diagnosed as silicosis. It proved to be miliary tuberculosis. I did not consider it silicosis, but I went into the history of the individual. He happened to be a brewery worker whose job was lining all the beer barrels with pitch and showing that no inhalation possibility could enter into his condition of the lungs by that type of work; so I think one has to take into consideration other diseases of inhalation that may stimulate inhalation pathology.

Dr. A. A. Bauer, Chicago (closing): In answer to Dr. Davis' question, the men, if they were found to have silicosis to any degree, were taken off of the exposure hazard, unless they were valuable in their line of work. At the present time they some times have to press these men into their special lines because of the few men they can get in these special jobs. If they continued in their same line of employment, they would not get any more beading, but the beading and the markings would be increased in diameter, so whenever they can, they take the men out of the dust hazard.

TUBEROUS SCLEROSIS

HERMAN JOSEPHY, M. D.
LINCOLN

More than sixty years ago, Bourneville from France gave the first description of the disease, which he called sclerose tubereuse. He established by his work one of the most interesting and most peculiar morbid entities known in neuropsychiatry, dermatology and pathology.

The disease has always been called tuberous sclerose, although this term is somewhat clumsy and does not cover the actual findings in any respect. The disease is known also as "Bourneville's disease". Other terms, such epiloia, spongioblastomatosis centralis, phakomatosis centralis never became popular; only the term epiloia is found sometimes in English papers.

During the sixty years, which have elapsed since Bournevilles first description, many reports have been published upon this topic. But in spite of this fact, the disease has not lost its interest, due to some evident reasons. First, the tuberous sclerose is rare. Even in an institution like Lincoln State School, only ten living cases are present among the 4300 inmates. Second, the whole pattern of clinical and pathological findings is unique in every respect, and some new features and relations, which were found rather lately, have even stimulated the interest, which this disease deserves.

The clinical aspect of the classical cases is well known and I have only to recall the essential findings in brief.

The typical case offers a significant combination of symptoms in the field of neuropsychiatry and of dermatology.

The neuropsychiatric findings can be subsumed under the heading epilepsy and feeblemindedness. The convulsions are the most constant symptom. Mostly they are of the generalized type, and a status epilepticus is not unusual. Feeblemindedness is present in the majority of the cases, but not in all of them, and may range from low idiocy up to imbecility. Out of ten cases in Lincoln State School seven were classified as low idiots and three as imbeciles.

Neither the epilepsy nor the oligophrenia are significant and none of the both allows a speci-

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fied diagnosis. Decisive, for the clinician, are the findings upon the skin. Some of them are pathognomic, that is, they secure the diagnosis, if they are combined with epilepsy. Others are not pathognomic.

The most famous skin symptom is the adenoma sebaceum, better termed the Naevus Pringle. Second to it, and also pathognomic, are the so-called shagreen leather spots. Less known, but absolutely significant too, are the subungual fibromata, small tumors, arising from the skin at the base of the nails. There may be one such tumor, or there may be many of them, on each finger and on each toe. Fibromata may be found on other parts of the body too, especially round the neck, but here they are not pathognomic for tuberous sclerosis. Cases without any skinsymptoms occur, and are described by Jakob, and others. But they are rare.

Van der Hoeve, in 1933, described small tumors or small white spots, in the retina of tuberous sclerosis cases, which may be found upon ophthalmoscopic examination. Evidently, they are rare. I have never seen them.

There is no doubt anymore, that Bournevilles disease is a hereditary condition. Already in 1913, Berg found cases in three generations of a family. But not before 1933, Belgian and Dutch psychiatrists published convincing family trees. From their work we learned that incomplete, abortive cases of the disease occur, which do not offer the classical picture. I show the fine family tree which was reported by Basstiaanse from Holland, in 1933. Here the father of thirteen children had a peculiar and rare stomach tumor, without epilepsy and feeblemindedness and skinsymptoms. Five of the thirteen children had a typical tuberous sclerosis, four were stillborn, and one daughter had abortive symptoms and had a child with abortive symptoms, too. Among our Lincoln patients I found two siblings, brother and sister, with tuberous sclerosis. Some other patients have, according to the reports given in the folder, relatives suffering from fits.

Tuberous sclerosis, being a real morbid entity, has its own pathology, a very characteristic one, — and in the last run, the pathological findings are decisive for the definite diagnosis and classification. I am able to demonstrate here the postmortem findings of three cases, who died in Lincoln State School. One of these patients expired, before I went to that place, and I am indebted for the slides to my friend Dr. Mackay, who was at this time in charge of the research laboratory in Chicago. The other two cases died since December 1940 and were posted by me. These three cases were found among 160 postmortems, in an institution, where tuberous sclerosis patients should accumulate. The small number indicates again that the disease is a rare one. The first of our cases was a girl, admitted at the age of ten. She was a spastic idiot, with a Naevus Pringle. She expired at the age of 16, from a pulmonary condition.

Case two is that of a man, who was admitted at the age of 43. He was a very low idiot, with epilepsy, and he had many findings upon his skin. There was a marked Naevus Pringle, shagreen leather spots, and several fibromata, especially a large pendulant fibroma at the skin of the head. He had no essential neurological symptoms. He died soon after admission from bronchopneumonia. His age is unusually high for a tuberous sclerosis case.

The third case was that of a girl, admitted at the age of twelve. She expired at the age of fourteen. Mentally she was an idiot, with convulsions and with a marked tendency to get into a status. The child was blind, evidently due to a choked and atrophic disk and to increased intracranial pressure. She had a Naevus Pringle and one subungual fibroma, findings which proved the tuberous sclerosis.

Case one and two were typical. Case three showed the combination of a tuberous sclerosis with a brain tumor, an unusual and rather rare finding.

As a rule, the postmortem findings in tuberous sclerosis are not confined to the brain and to the skin. It is known, for many years, that in Bournevilles disease, besides the brain, at least two organs frequently show tumors or tumorlike formations. These two organs are the kidneys and the heart. Mostly, no clinical symptoms arise from this pathology.

The most common findings are those upon the kidneys. All three cases which I could examine, were positive for this pathology. I show the gross specimens of case two and three. Case three has many whitish nodules scattered over

the whole renal parenchyma, ranging in size from that of a pinhead to that of a walnut. Case two offers a similar picture, but the nodes are larger, softer and more friable than in the other case. On histological examinations these nodes are mixed tumors, composed usually of lipomatous tissue, of nonstriated muscle and peritheliomalike parts. They do not show real malignancy, but one case was described, where such a node got really malignant. I think, as for my part, that there may be some relations to the so-called Wilmstumor of the kidneys, and I think it would be worthwhile, to examine cases of Wilmstumor for other signs of tuberous sclerosis.

Tumor formation in the heart is less frequent than in the kidneys — only one of our three cases had it. On gross examination, one or several white spots in the myocardium are found. Microscopical examination shows fattissue and embryonal myocardial elements.

Sometimes tumors in other organs are found, e. g. in the thyroid, in the intestines or in the bladder.

Especially the kidney tumors are characteristic enough, to suggest the findings in the brain, even before the skull has been opened. Usually, the brain is of average size and has no gross malformations. But the first view and even more the first touch reveals the pathology. The cortex shows peculiar nodes or spots, the "tubera", that is hard whitish parts, which by their consistency and by their color are markedly different from the normal gray and soft cortex. Two forms of tubera can be distinguished, a circumscript type and a more diffuse broadening and hardening of some part in the course of a normal gyrus. Usually many such tubera are present, irregularly distributed over the cortex, but always representing separate nodes in a cortex, which otherwise is normal in appearance. One side may be more affected than the other, the frontal parts more than the occipitals. In very rare cases only one single tuber was found.

The second very characteristic finding upon the brain are small tumors, arising from the inner lining of the ventricles and protruding in the ventricular lumen. They may be lined up along the stria terminalis and are more common in the lateral ventricles than in the others. The size of this nodules is usually around that of a pea. The basal ganglia, the brainstem and the cerebellum are mostly free from pathology, but in two of our cases I found calcifications of small parts of the cerebellum.

A section through a cortical tuber, stained either by toluidinblue or by a myelinmethod, shows the disappearance of the normal structure in this part. Gliastaining shows an abundant proliferation of gliafibres. Some rests of the normal cortical layers are always present. The most significant feature of the tuberous sclerosis in the brain are abnormal giantic cells. Since Bielschowsky's work on the tuberous sclerosis, we know, that there are two different types of giantcells. One kind belongs to the glia, and the second evidently represents giant nervecells with Nisslsubstance and neurofibrils. The latter are often of an immense size, many times larger as even the biggest normal nervecells.

The small ventricular nodes are composed of gliacells, which may form a dense net of fibres. They do not infiltrate the brainsubstance. I mentioned before, that the third of our cases offered an unusual finding besides the typical pathology of the tuberous sclerosis. In this case, a large tumor developed from one of the small intraventricular nodules. The picture shows this large gray mass, which was soft and filled almost the anterior horn of the lateral ventricle. On histological examination, a spongioblastoma is found, very cellular, with multiform nuclei and with many atypical mitoses.

A few words, at least should be said about the classification of Bourneville's disease. Evidently, the condition is singular, and has hardly any relation to others, well known pathological classifications. There are some connections to Recklinghausens disease, the neurofibromatosis, and, on the other hand, to certain types of malignant gliomas — Bourneville himself and some early investigators thought, the condition was an inflammation. But that is not true, because there are no signs of any inflammation. Hartdegen, a pathologist, who gave a histological description of a case as early as 1880, classified it as tumor and called it a glioma gangliocellulare. The modern view, supported by good histological examinations, centers around two points: malformation or dysplasia on the one side, and tumorformation at the other side. Most likely, the truth is in the midth and the disease is related to tumorformation as well as to malformation.

The findings upon the brain suggest a malformation rather than a tumor, although the giant cells are not found in typical malformation, e.g. in heterotopia. The kidney nodes and the skin-fibroma classify as tumors, without any doubt, but all of them show definite biological differences from genuine tumors. They are restricted in growth, and it is rather an exception, that one of these nodes gets wild and forms a real tumor, a renal sarcoma e.g., or a genuine glioma, as in our case.

As for the clinical treatment of the disease, it is evident, that there is no real remedy. But a diagnosis can be made and should be made. The diagnosis means an advice for the parents of such a child, not to have any more children. Family members of classical cases should be examined as carefully as possible, to find out the symptoms of abortive cases and to increase our knowledge about exceptional manifestations of the disease.

DISCUSSION

E. Liebert M. D. (Read by Dr. Goldberg.) Dr. Josephy has presented an excellent clinico-pathological study of tuberous sclerosis and has discussed many problems connected with this peculiar disease. Although we know the exact pathology of tuberous sclerosis and its clinical manifestations, many questions still remain unanswered especially those which correlate function and pathology.

Obviously we are not dealing with a system disease since ectoderm as well as mesoderm are involved. From work on embryonic tissue we know that the development of ganglion cells is finished at the end of 7th month of intrauterine life, and no new ganglion cells are formed after this period. One may, therefore, assume that neuronic elements which are so greatly enlarged in the small tumors of tuberous sclerosis must be due to some developmental disturbance at or before the 7th month of intrauterine life. At this time marked chemical changes take place, Phosphatides completely lacking until the 7th month begin to increase quite rapidly in the Central Nervous System. Myelin sheaths developing at a later stage are never involved in the tuber formation of this disease. It seems, therefore, quite probable that tuberous sclerosis is a disease due to a disturbance in the morphological and chemical development of the brain at the 7th month. Bielschowsky has also stated that this is the probable time of onset of this disease.

An interesting side light which the essayist has brought out is the fact that many stillbirths can be found in tuberous sclerosis families. This also might indicate some disturbance in the intrauterine development. Weil's and Zimmerman's experiments in producing artificial brain tumors by means of injection of chemical substances might help in the understanding of a chemical disturbance as a cause for the tuber formation.

Another interesting feature is that the small tumor formations usually do not produce an epilepsy of a Jacksonian type. In all cases that we could observe, the convulsions were generalized, and localizing symptoms, which one may expect in cases of such circumscribed lesions, are almost never observable. Also electroencephalographic tracing on one of our cases did not show any evidence of discharges usually connected with tumor formation, but rather such potential differences as are usually seen in cases of idiopathic epilepsy.

Feeblemindedness is commonly present in cases of tuberous sclerosis although the foci may be quite small and not very numerous. The question arises whether the function of those cells which do not seem to be involved in the tuberous process, and which do not present any outstanding morphological changes, may not be inadequate. I think that chemical studies, especially during the 7th month of pregnancy, may elucidate many interesting features. Electroencephalographic studies in cases in which we can apply the electrode directly to the tuber formation, may also be helpful in the future in the study of this disease.

I enjoyed the paper of Dr. Josephy much, and we should congratulate him for his excellent discussion and his instructive photographs.

Roland P. Mackay, M. D. (Chicago): I, also, should like to compliment Dr. Josephy upon his beautiful, brief, almost cameo-like description of one of the interesting conditions in neuropathology.

I have had occasion to examine several brains in which I thought at first the patient had suffered from tuberous sclerosis because the ependyma presented a hob-nailed appearance caused by small nodules of proliferated glia. This hob-nailed appearance of the ependyma was frequently associated with other malformations. However, the resemblance to the pathological picture of tuberous sclerosis did not go beyond these two or three features.

One may deduce, perhaps, from Dr. Josephy's presentation and from these observations that I have mentioned that, as he says, tuberous sclerosis is primarily a malformation, i.e., a heterotopia, with neoplastic changes superimposed.

It seems that perhaps the glia is primarily involved and that the other changes in the brain, the changes in the ganglion cells for example, may be secondary.

I should like to ask Dr. Josephy whether he thinks such cases as I have mentioned may have some relation to Bourneville's disease or may be abortive forms of that disease.

Dr. W. R. Kirschbaum, (Manteno): I should like to know whether Dr. Josephy found in his histological examinations calcified areas in these tumor-like growths, and whether he found in the same cases tumors expanding into the ventricles.

From the neuropathological and the clinical experience, we know and therefore we should find by

x-ray examinations some shadows which show in about 50 per cent of cases some bony changes, — cyst-like formations or small cavities and abnormal calcifications in the bones.

As to the brain, there are present from time to time so-called cotton-ball like shadows with a kind of furry periphery. I would like to know whether his cases show these calcifications.

The reason for the calcification is not anything concerned with malformation itself; it is probably due to a vascular disturbance in these highly spongioblastic tumors. In the Archives of Neurology and Psychiatry (1935) it was stated by Yakovlev and Corwin that a relatively high percentage of such calcifications was found at x-ray examinations. I would like to know what the opinion of Dr. Josephy is as to these findings.

Peter Bassoe, M. D. (Evanston): It has been a great privilege to me to hear Dr. Josephy. It is always enjoyable to hear the master make an obscure and difficult subject clear.

There is one point that Dr. Josephy touched on very briefly, — he didn't have time to go into it, — which I would like to ask him to expand upon a little more. That is the relation to central and peripheral neurofibromatosis.

A long time ago I had occasion to examine histologically the brain and spinal cord, and nerves, of a fourteen year old boy who had been perfectly normal mentally. He had very extensive neurofibromata on all the cranial nerves and nearly all the spinal nerves and on various nerves in the abdomen, neck, etc., and in the brain there were small microscopic areas showing the histologic changes of tuberous sclerosis.

There were also some small areas of calcification. There had been no mental change in this boy, — he was a very bright boy. It was known that the grandmother had had neurofibromata, peripheral only.

At the time I found some reference in the literature to the coincidence of tuberous sclerosis and central and peripheral news fibromatosis.

Dr. H. Josephy, (Lincoln): If I may answer the last question first, the relation to Recklinghausen's disease Bielschowsky found the same peculiar glia cells which he found in tuberous sclerosis, in the brain of Recklinghausen's cases.

So far, only in one place in the literature, in one family, was a case of tuberous sclerosis nearly related to a case of Recklinghausen's disease, and we should suspect such combinations more often, if both diseases are related closely.

We have one patient with Recklinghausen's disease in the institution which seemed to me to be quite a clear case, and when a few days ago I examined her, I learned, to my great surprise, that the girl had epileptic fits. I am not sure now where to classify this case, — whether it is a Recklinghausen's case or a tuberous sclerosis case. It will show in the post-mortem, perhaps.

As for the question of Dr. Kirschbaum about tumors expanding into the lining of the ventricles, I couldn't mention that because of lack of time. In fact, these small tumors inside of the ventricles are calcified frequently and we have the x-ray picture of one of the cases which died, where it shows on the x-ray picture. Perhaps that may sometimes be a help in making a diagnosis. The nodes, mentioned by Dr. Mackay, are subependymal heterotopias and are not related to tuberous sclerosis.

One point mentioned by Dr. Liebert is very interesting. We have a lot of rather circumscribed changes in the brain, — a lot of nodes upon the cortex, nodes placed in the centralis anterior and other parts, and localized symptoms are extremely rare in these cases. Nobody knows why. It is a circumscribed lesion and it does not make any focal lesions.

Thank you very much.

FATAL PULMONARY EMBOLISM FOLLOWING VARICOSE VEIN INJECTION

The injection treatment of varicose veins is not free from complications, some of which may even be fatal. A patient who died of a fatal pulmonary embolism while undergoing treatment in our clinic for varicose ulcers of the lower extremities was a 65-year-old woman with a 10-year history of varicosities, edema, and ulceration. She received a total of 7.5 cc. of a 5% solution of sodium morrhuate in 5 injections, the latter 4 being given when she was confined to bed. She died from a pulmonary embolism 31 days after the first injection, and 8 days after the last injection. An analysis of the fatal cases reported indicates that bedridden patients should not be injected. It is important to keep the patient ambulatory following the injection treatment of varicose veins. Injection of too large amounts of sclerosing solution is also dangerous. In our opinion, no more than 10 cc. of solution should be injected at any one time. Routine high saphenous ligation should precede the injection treatment if the fatal complication of pulmonary embolism is to be avoided. — *Arkell M. Vaughn, M. D. and William M. Lees, M. D., Journal of the American Medical Association, April,* 11, 118: 1293-1296, 1942.

Peanut oil, now being used for cooking and salad oil, is used industrially in shaving lotions, cosmetics, soaps, dyes and axle grease; and medically, among other uses, in massage for infantile paralysis victims.

Industrial Health

Committee On Industrial Health — Frederick W. Slobe, Chm., 2024 South Western Ave., Chicago, Frank P. Hammond, H. A. Vonachen, R. I. Barickman.

ABSENTEEISM

Workers Win Wars — Absentees Help Lose Them

Absence from work in American industry reaches the tremendous total of about 500,000,000 days each year. While it is fallacious to assume that production rises or falls in direct proportion to attendance, the deleterious effects of absenteeism are significant. Necessary absences due to incapacitating ailments present a challenge demanding better attention to health and hygiene. And the demoralizing effect of unnecessary absences undermines the industrial and social structure which, if continued, may have a cumulative action of greater significance than the immediate effect on production itself.

The intense interest in this subject is a direct corollary of the war effort which recognizes the essential role of industrial production. And, obviously, the conservation of man-power is intimately concerned with absenteeism. Newspapers have been featuring this subject recently and some strong statements have been made, one of the most emphatic having been made by Capt. Rickenbacker when he said, "Absenteeism among workers in essential war industries is our greatest evil." Such statements are understandable when we compare the lot of industrial workers with that of those in the armed services. Consider, for example, a slogan of our combat forces: "to keep as many men at as many guns as many days as possible." Surely, then, the least that those not in combat can do is to lose as few days as possible in the non-combatant activities of the war effort. And this constitutes a community and national challenge.

In analyzing the causes for absenteeism, due to a common misconception much over-emphasis has been placed on the relative importance of time lost due to accidents and illnesses arising in industry. Actually, sickness and injury with no occupational connection cause from 10 to 12 times as many days lost as industrial accidents and occupational diseases. Medical statistics as to the cause for lost time vary with different industries and localities. A representative report is that of McGee analyzing the experience of the Hercules Powder Company for 1941, covering 10,000 employees, predominantly males. With respect to the relative frequency of the various medical causes for absences, respiratory ailments constituted 29.8 per cent, gastro-intestinal causes were 24 per cent, injuries 11.7 per cent, miscellaneous ailments and request absences were 25.8 per cent, skin diseases 4.1 per cent, nervous diseases 1.4 per cent, degenerative diseases 1.8 per cent, and communicable diseases 1.4 per cent. Analyzing the severity of each group (that is, the percentage of the total days lost), respiratory disease caused 25 per cent, gastro-intestinal ailments 18.6 per cent, miscellaneous diseases and request absences 15.8 per cent, nervous diseases 11.4 per cent, accidents 16.9 per cent, degenerative diseases 5.6 per cent, skin diseases 3.5 per cent, and communicable diseases 3.2 per cent. Most statistics show a considerably higher percentage for respiratory ailments. Gafafer has made a detailed study of all absences of 1 or more days in a large public utility in Massachusetts. Males averaged slightly less than 1 absence per year with an average loss of 8 days per absence; females averaged

about 1.8 absences per year with an average duration of disability of about 6 days. Of absences lasting 4 days or less, about 60 per cent were due to respiratory ailments and about 15 per cent to gastro-intestinal conditions. For absences of longer duration, the percentage occupied by the respiratory group dropped steadily to about 23 per cent for males for 21 day absences, and 35 per cent for females, in contrast to the group comprising all ailments other than those of respiratory and gastro-intestinal origin, which group percentage rose to 38 per cent in males for 21 day absences and 40 per cent for females.

Gastro-intestinal ailments are being subjected to considerable scrutiny as a cause for absenteeism. McGee's statistics quoted in part above, indicate that 81.3 per cent of the gastro-intestinal ailments consisted of acute gastro-intestinal upsets, colon dysfunction, and miscellaneous functional disturbances. Particularly noteworthy is the fact that in this group, absences on Monday were about 5 times as frequent as on either Thursday, Friday, or Saturday. Excesses of food and alcohol, and lack of sufficient sleep were considered as probable causative factors in these Monday morning or post-holiday dyspepsias.

Absenteeism may, perhaps, be subdivided into 3 groups:

1. Justifiable incapacity due to a disabling illness or injury.
2. Unjustifiable absenteeism where deliberate, wilful absences occur. Strenuous week-ends and holidays, high earning power coupled with restrictions on spending, the ease of getting a new job, the desire for recreation, lack of interest in their job, etc. are predisposing factors.
3. The mixed group, in which although no complete incapacity exists, there are certain extenuating circumstances to allow at least a partial justification, such as fatigue, long hours, night shifts, poor transportation, inclement weather, inadequate housing facilities, and pressing domestic and business affairs. Coupled with an indifferent morale, these factors often create absenteeism.

The problem is being attacked from various angles, numerous measures having been proposed. Punitive measures have been suggested, especially in certain plants and ship-yards where the absenteeism rate is 10 per cent instead of the expected, normal average of about 3 per cent. It would appear, however, that other measures should be conducive to better results. Should not efforts to educate the worker and improve his morale be much more effective? Such efforts failing, the chronic offender may need punishment but predisposing factors should first be eliminated.

Among methods of approach are the following:

1. Pride in the job. The worker should be led to feel his job is important and that it suffers if he leaves it.
2. Elimination of boredom. Disinterest occurs when the job does not fit in with the employee's special aptitude or inclinations.
3. Chronic fatigue. Long hours, lack of rest periods and vacations, and a shift not suited to the worker's outside affairs may, in individuals with a low physical and psychological reserve, result in fatigue and chronic discontent.
4. Education as to habits, health, and hygiene. Instruction as to adequate nutrition, the effects of over-indulgence in alcohol, the need for sufficient sleep and recreation, and avoidance of too strenuous week-ends and holidays should be very helpful.
5. Morale building. This psychological approach cannot be over-emphasized. It concerns all the factors which affect the worker's attitude. The trouble may be in the plant; it may be in the worker's home, it may be within himself; if the cause can be found, a cure may result.
6. Adequate housing and transportation facilities.
7. Community facilities for all shifts. Much of the absenteeism among night and odd-shift workers might be reduced if the usual facilities of stores, offices, and places of recreation were available during their hours off.

Quite notable has been the experience in some localities such as Hartford, Connecticut, where many white-collar employees, after finishing their regular day's work, go to another plant to serve a split-shift (half of a regular shift) handling various types of machines such as lathes and presses. In spite of the increase in the total hours employed, absenteeism has been extremely low. The secret of this is the spirit of enthusiasm displayed by these workers. If such a spirit could be developed in most workers, many of the other problems would disappear.

The above is not designed to "coddle" the workers but many workers are so constituted that they require an approach by one or more of the above suggested measures. Some plants have adopted elaborate statistical absenteeism studies with strenuous efforts to reduce lost time. The Bell Aircraft Corporation replaces a worker's usual time card with an "A.W.O.L." card after an absence, which must be explained to and approved by a foreman or department head before the time card is replaced. One plant gives prizes for those with the best attendance record. The Cessna Aircraft Company had a contest for a slogan which was won by a 17 year old girl employee, whose slogan was, "You Can't Spell Victory With An Absent T." Such a slogan merits general adoption. Some plants follow the normal reasoning that the employees themselves are the "safety engineers," using the slogan of, "Stay In The Safety Zone," which implies all phases of safety and health education.

Since perhaps only 50 per cent of absenteeism may be said to be justifiable, it is obvious that the present interest is warranted. Mention has been made of the frequency of Monday and post-holiday absences. Noteworthy, also, is the fact that the lowest absentee rate is usually on pay-day. Drinking, except in the case of the inveterate alcoholic, is probably an aggravating influence rather than a primary cause. It is frequently an "escape mechanism" to get away from boredom, discontent, unhappiness, and lack of adaptability for wholesome recreation or relaxation.

The broad program for the betterment of industrial health and hygiene undertaken by the medical profession, national agencies, manufacturers, and by labor organizations should have as one of its beneficial effects a reduction of absenteeism. Health improvement, good remedial care, sound preventive medicine, and a sense of awareness by every physician of the importance of keeping the worker fit and getting him back to work promptly; a co-operative effort by management and labor; the development of the sense of responsibility of the worker; these are the pillars of production.

Frederick W. Slobe, M.D.
Chairman

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CONTROL AND TREATMENT OF NITROUS FUME POISONING*

"A conference on nitrous fume poisoning held in Cincinnati, Ohio, on January 28, 1943, was attended by about 35 people, including among others representatives of explosives manufacturing companies, the Office of the Chief of Ordnance, U. S. Army, the Office of the Surgeon General, U. S. Army, the U. S. Bureau of Mines, and the U. S. Public Health Service.

"The literature on poisoning by nitrous fumes and case histories of recent fatal and non-fatal cases of poisoning were reviewed. Suggested engineering control measures were: (1) Ventilation; (2) Adequate exits; (3) Proper storage of materials likely to cause nitrous fume exposures.

"Several medical control measures were suggested:

1. Pre-employment examinations should include x-ray of the chest, excluding from employment individuals with certain upper respiratory conditions, asthma, reactivated tuberculosis, and diseases of the heart.

2. Any exposure should be reported promptly and the worker referred to the hospital for an evaluation of exposure.

3. Any workers showing evidence of burning of the throat or chest, epistaxis, lassitude, pallor, cyanosis, and abnormal breathing

*Industrial Hygiene, Feburary, 1943. Published by National Institute of Health, U. S. Public Health Service, Bethesda, Md.

should have absolute bed rest for 24 hours as a minimal period of observation (distressing symptoms may show up as long as 72 hours after exposure). During the observation period the patient should be kept warm, supplied with oxygen if necessary, given a liquid diet, and have his blood pressure and pulse taken at regular intervals and recorded. The blood picture should also be studied periodically, particularly as regards red blood cell count, and hemoglobin and methemoglobin determinations.

"If definite evidence is obtained that pulmonary edema is developing:

1. Bleed the patient 500-600 cc.
2. Use plasma to combat the hemoconcentration.
3. Administer oxygen continuously; administration under pressure may be advisable.
4. Do not give morphine. If sedation is necessary, allonal or luminal should be used.
5. Use of cardiac stimulants should be discouraged.
6. As this is an uncompensated alkalosis, soda is contra-indicated.
7. Give concentrated glucose intravenously.
8. Mercury diuretics may be tried.
9. Adrenal cortical hormones may be tried.
10. The most satisfactory treatment is prevention."

TUBERCULOSIS FINDINGS IN INDUSTRY REPORTED*

"Seventy-seven war industries in 11 different States were surveyed by the eight 35 mm. photofluorographic units operating in industry prior to February 1, 1943, reports the Office of Tuberculosis Control, U. S. Public Health Service.

"A total of 194,896 individuals were x-rayed. Tabulations on results of the x-ray are available for 125,190 people. Of these, 1,631 or 1.3% were found to have significant pulmonary tuberculosis. The distribution of the positive cases by stage of the disease was as follows: 874 or 53.6% minimal; 707 or 43.3% moderately advanced; and 50 or 3.1% far advanced.

"In the District of Columbia 28,098 government workers have been x-rayed. Exactly 300 cases (1.1%) of pulmonary tuberculosis have been discovered. Of these 182 (60.7%) were minimal, 106 (35.3%) moderately advanced, and 12 (4.0%) were far advanced. In addition, 1,300 workers at the National Institute of Health have been x-rayed. Among these, 15 cases of tuberculosis were found — 9 minimal and 6 moderately advanced."

DEGREASING COMPOUNDS IN NEW FORMS*

"Degreasing compounds appearing under nondescriptive trade names require careful analysis to insure proper protective measures in their use. Two different soap compounds recently submitted to the National Institute of Health for analysis were found to contain ethylene dichloride in appreciable amounts. One compound contained 33 percent ethylene dichloride. Control of solvent degreasing compounds by enclosure, condensation, or local exhaust ventilation is accepted good practice but alkaline degreasing compounds are usually controlled only to prevent dermatoses. The practice of adding chlorinated hydrocarbons to alkaline degreasers will require increased vigilance on the part of the industrial hygienist."

CARBON MONOXIDE IN METALIZING*

"In certain repair shops where brakedrums were being built up by metalizing with steel wire, employees complained that the fumes made them sick. These fumes consisted of iron particles about four microns in diameter which, when taken in through the mouth, produced a peculiar taste and some other vague symptoms. It was also noticed that metalizing being done with brass wire did not produce white zinc oxide smoke. It was then suspected that the metalizing was being done in a reducing atmosphere of excess acetylene and that there might be a possibility of high concentrations of carbon monoxide. Tests made on a large scale metalizing job using steel wire confirmed this premise since concentrations of carbon monoxide as high as 500 parts per million in the breathing zone of the operator were recorded when metal screens had been placed around the location to prevent the dispersion of large particles throughout the room."

*Industrial Hygiene, March 1943. Published by National Institute of Health, U. S. Public Health Service, Bethesda, Md.

FLUORIDE AND CHROMIUM FROM ELECTRIC WELDING*

"The welding rods used in welding armor plate had produced numerous cases of throat irritation. Analysis of the composition of these rods showed high percentages of fluorine and chromium. Atmospheric samples at the welders breathing level showed concentrations of fluorine averaging 2.6 mg./cu.m. and ranging from 1.6 to 5.1 mg./cu.m. Chromium concentrations were approximately 10 times the maximum amount permitted for chromic acid. It was the concensus that the production of hexavalent chromium compounds or chromic acid in appreciable amounts in the welding operations was improbable and that other forms of chromium would not be toxic in the concentrations encountered. Consequently it was assumed that exposure to fluorine had caused the workers' throat irritation. While the maximum permissible concentration of fluorine for continuous exposure has not been established it was recommended that the concentration should be kept at as low a level as possible and preferably below 1 milligram per cubic meter."

HITLER AND THE DEVIL

Hitler called the Devil up on the telephone one day.
The girl at Central listened to all they had to say,
"Hello," she heard Hitler say, "Is Old Man Satan Home?
Just tell him it's the dictator who wants him on the phone."
The Devil said, "Howdy," and Hitler, "How are you?
I'm running a hell here on earth, so tell me what to do."
"What can I do," the Devil said, "dear old pal of mine?
It seems you don't need any help—you're doing mighty fine."
"Yes, I was doing very good until awhile ago,
When a man named Uncle Sam wired me to go slow:
He said to me, 'Dear Hitler, we don't want to be unkind
But you have raised hell enough, so you'd better change your mind.'
I thought the lend-lease bill was bluff, and could never get it through,
But he soon put me on the spot when he showed me what he'd do.
Now that's why I called you, Satan—I need advice from you,
For I know that you will tell me just what I ought to do."
"My dear Hitler, there is not much left to tell,
For Uncle Sam will make it hotter than I can here in Hell.
I have been a mean old Devil, but not half so mean as you,
So the minute that you get here the job is yours to do.
"I'll be ready for your coming, and I'll keep the fires all bright,
And I'll have your room all ready when Sam begins to fight,
For I see your days are numbered and there's nothing left to tell,
So hang up your phone, get your hat, and meet me here in Hell."

New York State Journal of Medicine, March 1, 1943.

WINGS FOR THE DOCTOR

Aviation has introduced many new elements into the duties of military physicians. The Air Corps surgeon is as much at home in a plane as he is in an operating room.

In fact, medical officers in all branches of the armed services have taken to the air.

It is not only in their mode of transportation that modern military physicians have become air-minded. The Air Corps medical officer must not only provide medical service for flight and ground crews but must check their food and clothing and even study plane design from the viewpoint of health protection.

This is no matter of stereotyped routine. Aviators' clothing, for example, must be warm enough to protect the body at high-altitude temperatures of 60 degrees below zero and at the same time allow flyers to climb into the cockpit at ground temperatures of as high as 120 degrees. Ordinary dietetic considerations are enhanced by the strain of air combat, which markedly increases vitamin requirements. Flyers must be guarded against carbon monoxide poisoning; ground crews need protection against the possibly harmful effects of cleaning solvents and spray paints. These are just a few of the day-to-day problems of aviation medicine.

In a field as new as this, there is necessarily a vast amount of research to be done; and flight surgeons are playing the dual part of guinea pig and experimenter. In the former role they go through all of the acrobats of aerial combat; in the latter, they carefully observe physical and mental reactions.

The results of this wartime research will have far-reaching effects on the development of postwar civil aeronautics. Mankind is taking to the air — and flying doctors are helping to make flight safe. — *J. Med. Soc. Co. N. Y.*

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*Industrial Hygiene, March, 1943. Published by National Institute of Health, U. S. Public Health Service, Bethesda, Md.

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

The Chicago Urological Society at its Annual Meeting, April 22nd, elected the following officers: President, Charles G. Weller; Vice-President, Theophil P. Grauer; Secretary and Treasurer, Russell D. Herrold.

W. Kenneth Kennings of Pittsfield addressed the Macoupin County Medical Society at Carlinville on May 25th. He gave an illustrated talk on "The Diagnosis and Treatment of Carcinoma of the Rectum."

Sixteen physicians and three hundred friends honored C. H. Voorheis of Hutsonville on April 21st for his fifty years in the practice of medicine. The meeting was held in the new Hutsonville Township High School gymnasium which was built while Doctor Voorheis was President of the Board of Education. Dr Andy Hall presented him with the Fifty Year Button and a certificate from the Illinois State Medical Society. The people of Hutsonville presented Doctor Voorheis with a reading lamp, attaching a note which read "Truly, your life in the community has been a light to the pathway of its citizens."

Lt. Col. Roy R. Grinker of Chicago was recently named consultant in neuro-psychiatry to the Royal Air Force. At present Col. Grinker is stationed in Africa in charge of neuro-psychiatry for the U. S. Army forces. He formerly served as chairman of the department of neuro psychiatry at Michael Reese Hospital.

There is no more miserable human being than one in whom nothing is habitual but indecision.

—*William James.*

DEATHS

RALPH LINWOOD BENJAMIN, St. Anne; Rush Medical College, 1902. Vice President of American Association for the Study of Goiter; chairman of the surgical section of St. Mary's Hospital, Kankakee. Died May 11, 1943 from injuries suffered in a train-car crash at the age of 64.

LOWELL N. CLYNE, McLeansboro; Chicago Medical School, 1939. Killed in a plane crash May 10, 1943, at the age of 33.

CLIFFORD U. COLLINS, Peoria; Physio-Medical College of Indiana, Indianapolis, 1891, Marion-Sims College of Medicine, St. Louis, 1892. Died May 26, 1943, at the age of 76 years.

JOHN CHRISTIAN DE FRIES, Thawville; Rush Medical College, 1894. Practicing physician in Thawville for 45 years. Died April 11, 1943 at the age of 81.

WILLIAM H. FINN, Chicago; University of Illinois College of Physicians and Surgeons, 1897. Practiced in Chicago for 40 years. Died April 22, 1943 at the age of 74.

LOUIS JAMES FREDERICK, Joliet; Rush Medical College, 1892. Active member of the Will Grundy County Medical Society. Health Commissioner of Joliet since 1938. Died suddenly May 10, 1943 at the age of 71.

STELLA M. GARDNER, Chicago; University of Illinois College of Physicians and Surgeons, 1901. Pathologist at Children's Memorial Hospital until her retirement in 1941. Was instructor in pathology at the University of Illinois 10 years and more than 30 years part owner of the Lincoln and Gardner Laboratory. Died May 5, 1943 at the age of 75.

ARTHUR HENRY GEIGER, Chicago; University of Illinois College of Physicians and Surgeons, 1900. On staff of Illinois Masonic and Henrotin Hospitals; member of examining board, State of Illinois. Fellow

of the American Academy of Otolaryngology and Ophthalmology. Lt. Col. in the Medical Reserves, U. S. A. Died May 12, 1943 at the age of 65 years.

HERBERT IRA HARRIS, Geneva; University of Buffalo School of Medicine, 1898. Retired Lt. Colonel in the U. S. A. Medical Corps. Died April 23, 1943 at the age of 68.

ROBERT H. HARVEY, Chicago; Northwestern University Medical School, 1894. Practiced in Chicago more than 40 years. Died April 29, 1943 at the age of 75.

THOMAS JEFFERSON HILLIARD, Fairfield; Physio-Medical College of Indiana, Indianapolis, 1891. Died May 16, 1943 at the age of 79 years.

JACOB J. HOOD, Cicero; Jenner Medical College, 1903. Contributed to many medical journals. Was first health commissioner for the town of Cicero. Died May 27, 1943 at the age of 73.

PAUL V. JOYCE, Chicago; University of Illinois College of Medicine, 1912. Was Lieutenant in the Army Medical Corps in First World War. Died April 30, 1943 at the age of 59.

DAVID MURTON KNAPP, Mendon; Sioux City College of Medicine, Sioux City, 1896. Practiced in Quincy for 47 years. Died May 5, 1943 at the age of 71.

PHILIP H. KREUSCHER, Chicago; Northwestern University Medical School, 1909. Formerly Medical Director, Industrial Commission of Illinois; associate professor of surgery, Northwestern University Medical School; chief surgeon Chicago Area, Carnegie Illinois Steel Corporation. Died June 1, 1943 at the age of 59 years.

RAYMOND H. MCPHERRON, Chicago; Northwestern University Medical School, 1921. Surgical Staff of Woodlawn Hospital. Died May 23, 1943, at the age of 49 years.

CAPT. JEROME B. MARCINIAK, Camp Claiborne, La., formerly of Chicago; Loyola University School of Medicine, 1931. Died of heart attack May, 1943 age 40.

SAMUEL M. PITTMAN, Galesburg; Rush Medical College, 1888. Was 1st Lieutenant in First World War. Practiced medicine in Warren County for 34 years. Died April 16, 1943 at the age of 81 years.

CLARENCE B. RIPLEY, Galesburg; University of Michigan Medical School, Ann Arbor, 1902. Practiced medicine in Galesburg since 1905. Past president of Knox County Medical Society, member of A. M. A. and American College of Surgery; past chief of staff of the Cottage Hospital. Was Captain in the Medical Corps in the First World War. Died following a heart attack May 6, 1943 at the age of 66.

GRANT F. RULIFSON, Chicago; Harvey Medical College, 1904. Charter member of the Granville Methodist church. Practiced for nearly 40 years on the north side of Chicago. Died May 16, 1943 at the age of 79.

WESLEY CLAUDE RUNYON, Belleville; Keokuk Medical College, 1907. Former assistant superintendent of the Alton and Anna state hospitals. Died suddenly of a heart attack May 10, 1943 at the age of 57.

FRANK CASSIUS SIBLEY, Carmi; Beaumont Hospital Medical College, St. Louis, 1900. Was mayor in Carmi for two terms, former president of the Southern Illinois Medical Society, a councilor of the Illinois State Medical Society and had served as a major in the Army Medical Corps in the First World War. Died May 7, 1943 at the age of 68.

ENOS S. SPINDEL, Springfield; Eclectic Medical College, Cincinnati, 1899. Oldest medical practitioner in years in service in Springfield. Died as a result of an automobile accident May 25, 1943 at the age of 73.

HARRY GIDEON WELLS, Chicago; Rush Medical College, 1898. Professor emeritus of pathology at the University of Chicago and associated with the university for 42 years. Director of the Otho S. A. Sprague Memorial Institute in 1911 and a full professor of the university faculty two years later. Served twice as president of the American Association for Cancer Research and once as president of the Association of Pathology and Bacteriology. Was Lt. Col. in First World War. Died following a heart attack April 26, 1943 at the age of 67.

ISAAC HENRY WINEBERG, Quincy; Chicago Medical School, 1927. Became member of the Adams County Medical Society in 1929. Died May 12, 1943, of a heart attack, aged 54 years.

HERBERT S. WORTHLEY, Joliet; Northwestern University Medical School, 1893. Died May 5, 1943 at the age of 76 years.

MENINGITIS INCREASES ALMOST 20 PER CENT IN WEEK

Cases of meningitis throughout the nation increased almost 20 per cent during the week ending January 23, latest for which figures are available. Reports from state health officers to the U. S. Public Health Service show 354 cases for the past week as compared with 298 for the week of January 16. Most of the cases are on the East and West coasts.

Total number of cases for the year to date, that is, to January 23, is 941, which is probably the largest number for that short a period since the U. S. Public Health Service has been keeping weekly records of this disease.

Influenza cases totalled 4,387 for the week of January 23, about the same as for the previous week. Measles increased slightly.

There were 23 cases of smallpox, five in Ohio and four in Indiana. No other state reported more than two.—*Science News Letter*, February 6, 1943.

P. R. N.

The Jocular Jingles of C. G. F.

by

Charles G. Farnum M. D.

Peoria, Ill.

SEASONABLE SONNETS

JUNE

Ah! June! The answer to our ardent prayers,
When all of nature seems in perfect tune!
Small wonder there are countless bridal pairs
For optimism soars to heights in June.
The age-old lust for picnics runs amuck,
An atavistic yearning for the ground,
But vegetarians are out of luck
When bugs and flies and ants so much abound.
The graduates go forth from learning's halls,
The school boy now can fish in tranquil streams,
We all resent our four confining walls,
Cast work aside and idly dream our dreams.
The poets rave of balmy nights and days
And all are balmy in their separate ways.

SYMPATHY

What gobs of emotional stress we waste, or pretend to waste, on the victims of situations of inconcinnity or incompatibility.

We pretend to feel sorry for the mother hen caring for a brood of ducklings in the vicinity of a pond;

We put on the appearance of grief for the poor chap who harbors a crop of hives beneath a plaster paris cast;

We go through all the expressions of sadness for the one-armed paper hanger with the itch;

We actually shed tears for the man with inflammatory rheumatism and St. Vitus dance at one and the same time.

But for the most part these are crocodile tears and our emotions are tinctured with supercilious and ill-concealed hypocrisy and some merriment.

But the person entitled to deep, profound, sincere, honest-to-goodness, one hundred per cent, abiding sympathy with no restrictions, modifications or dilutions is the poor unfortunate guy who for the first time, is trying to chew gum with a set of recently acquired false teeth.

PATHOLOGICAL SONNETS

Sciatica

The fiends of hades burrow in my thigh
With chisels, branding iron and teeth and claws,
Through awful nights I do not close an eye
And no one yet has specified the cause.
Appendix, tonsils, teeth have gone their way,
The twisted back and painful thigh remain,
Massage and heat and casts have had their day
And all I seem to get is added pain.
At times there comes some respite of the pain
And when I think I'm getting some relief
The agonizing thing comes back again
And adds some tears and curses to my grief.
I'm often told and hear with great regret,
Sciatica has never killed one yet.

GOLF CUPS

This game of golf is grewsome and it fills our souls with gloom,
Each time we try to play it we are headed for our doom.
We drive them straight, we pitch them true and yet our scores are high,
We start out singing merrily and finish with a sigh.
The reason for this grief and woe is putts we always miss,
Because the golf authorities make all the

C T
U H
P I
S S
LIKE

Some day I'll build a golf course where a man can make a score,
And all these three and four putt greens will cease forevermore;
I'll leave each fairway as it is, likewise each trap and green
And yet you will not fuss or swear, your soul will will be serene,
Your mind will be at peace and you will play in heavenly bliss,
Because the change I'll make will be to build the

C S
U I
P H
S T
LIKE

SOPHISTES THE SEER

Sophistès the Seer exhorteth us to utilize to the utmost those days when the sun shineth from the azure sky to the furtherence of the health and the happiness of mankind.

Furthermore he remindeth us that Hermes of the ancient of days saith, "The Sun is Laughter, for 'tis He that maketh joyous the thoughts of men and gladdeneth the infinite world."